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EVERYBODY—EVERY PAYDAY
10% IN WAR BONDS

This advertisement is a contribution to America's all-out war effort by
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Travel

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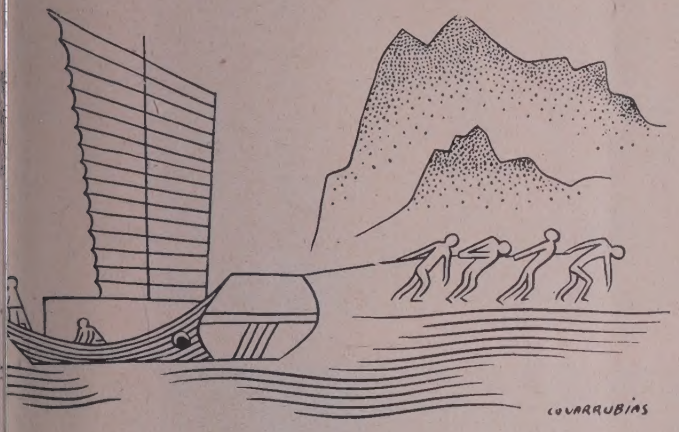
February, 1943 CONTENTS Vol. 80, No. 4



IN THE GORGES OF THE YANGTZE
From a drawing by Miguel Covarrubias

PAPUAN HEADDRESS ..... Cover
Photograph by Pearl from Black Star

THROUGH THE ROARING FORTIES IN MID-WINTER
By Alan Burgess..... 4

THE SNAKE STONE OF NEPAL ....
By Hassoldt Davis..... 10

ARIZONA'S FLYING CHINESE .....
By Shih Yung Wang..... 14

ORCHID HUNTING IN MEXICO ...
By Edna and Williams Evans 16

PLANTING A VICTORY GARDEN IN THE SEA
By Martin Sheridan..... 18

HARVESTING OYSTERS IN VIRGINIA
By Earl Chapin May..... 22

MAN MADE ARARAT OF THE JUNGLE
By Captain Edward A. Raymond 22

MOJAVE'S MINERALS GO TO WAR.
By Richard Hamilton..... 27

NATIONAL TRAVEL CLUB 31

COBURN GILMAN, *Editor*
WILLARD FAIRCHILD, *Art Director*

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OUTWARD BOUND FOR AUSTRALIA

Leaving Capetown the *Cap Pilar* heads out to sea bound for Sydney over six thousand miles of ocean churned by the winds that roar eternally around the bottom of the world. While the ship rolls to an alarming angle, the sailors in the picture below are trying to put a reef in the huge spanker sail aft during a big blow.

Travel

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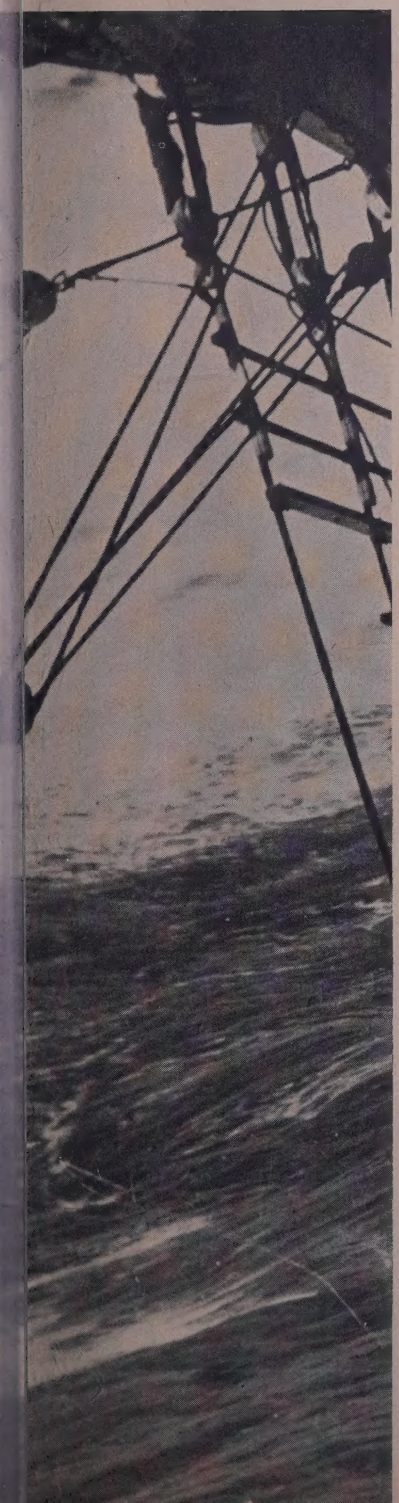


While a swelling sea comes rolling up behing the *Cap Pilar* the first mate takes his early morning shot.

THROUGH THE ROARING FORTIES IN MID-WINTER

By Alan Burgess

With photographs by the author

WE LEFT SIMONSTOWN, South Africa, in our tiny sailing barquentine, *Cap Pilar,* expecting the worst. The first mate told us all about it. Ice-coated rigging, ferocious gales, icebergs looming in the night, masts plucked like goose quills from flooded decks. Six thousand miles of stormy ocean before we arrived at Australia and Sydney.

"Ho-ho," he said stretching his leathery Finnish face, and squinting ghoulishly through his pale blue slits, "You ain't real sailors till you sailed through de Westerlies." He was a nice fellow, the mate; the sort of guy who slaps a seasick sailor consolingly on the back with one hand, and offers him a lump of salt pork tied on a piece of string with the other. But he convinced us thoroughly that running the easting down in a small sailing ship in mid-winter was going to be no picnic. No picnic at all.

We had a few small consolations. By means of these eternal winds which roar round the bottom of the world —usually called the Roaring Forties or the Westerlies— much of the world's traffic in sail from Captain Cook to the modern Erickson grain ships has driven eastwards. Even today, no doubt, the convoys to Australia seek shelter from marauding raiders and submarines there. A sub would be tossed like a matchstick in a whirlpool in those seas; and when the hunted *Graf Spee* fled deep south to hide there, she did not stop long. The Nazi sailors were used to the protected Baltic. Interviewed when their ship was a blazing hulk in Montevideo Bay they said they never dreamed such weather existed.

We had our apprehensions too. One was the knowledge that only a few years ago the Danish cadet ship, *Copenhagen,* disappeared in those lonely latitudes. She left no wreckage or trace. She just disappeared. The Westerlies are like that.

An amateur crew bound on a world cruise for the mere fun of the thing naturally make many friends during a three months stay in a port. We certainly had. And many of our Capetown friends came over to Simonstown to see us off.

Unfortunately sailing ships have an unpleasant habit of refusing to be seen off. A tug towed us out into False Bay, blew a long blast of farewell on its siren and then waited expectantly—as did the crowds lining the quay—for us to glide away. Thirty-six hours later the tug and all the sightseers had gone home, but we

were still in False Bay. There was not a single breath of wind.

At last, however, in answer to our prayers, a wind arrived which the South Africans innocently title a southeaster, but which really combines the ferocity of a typhoon with the disturbing power of a thousand pound bomb, and off we went ploughing down towards the Antarctic and the Roaring Forties.

As a prelude to the Westerlies the southeaster more than held its own. For three days it snarled and slavered behind us, bursting over our decks in wild flurries of spume and green water. For three days half the crew were seasick, and the whole ship's company lived on an exclusive diet of bully beef and stew—the same stew, served three days running. And then, amazingly, the grey skies cleared, the wind dropped, and we were becalmed. We were so completely becalmed that even the albatrosses which had been our companions since the first day had to give up and alight on the water.

Before we left England we had seen these great birds leering glassily from behind glass cases in museums; and ever since we sailed as far south as Tristan da Cunha we had watched them sliding and curving like wind-driven scimitars, swooping low to see if the helmsman's hat was edible, when there was hardly enough wind in our sails to give us steering way. We had seen them sailing in the grey light of dawn around our masthead, huge, mysterious, ominous birds, amply complexioned to lend credence to all the tales of all the ancient mariners that ever lived.

Our marine biologist knew a few things about them. They bred on the slopes of Tristan, Inaccessible and Gough, lonely islands deep in the southern Atlantic. The parent birds with a lordly contempt for the seasons lay their single egg as the southern winter is approaching, so that during the nine months the chick is growing up (and being constantly fed by the parents) it may be blowing gales and snowing the whole time. For the last two months of its immaturity the parents leave it, and the young albatross is left alone on its nest. It receives nothing to eat. Absolutely nothing. And eventually, around November, it rises by its own volition from the nest, and goes floating off to make its own living among the lonely sea wastes that fringe the southern rim of the world.

Who would be an albatross we thought? They awed us. They certainly surprised us. And seeing them swimming on the surface so close to us like great ducks was an invitation to try and catch one of these omnipotent birds.

The first mate who had served in Erickson's sailing ships had an ingenious device for catching them, a contraption consisting of a small triangular piece of metal with a lump of salt pork attached, which was towed behind the ship. When the birds grabbed the pork the device was supposed to wedge in their beaks without harming them in any way, so that they could then be pulled on board. But although the albatrosses grabbed pound after pound of salt pork their beaks disconcertingly enough were invariably of the wrong shape. So the mate said.

The method we adopted on the spot was cruder but much more effective. We attracted them by throwing over a lump of salt pork on a piece of spun-yarn, and when one of them grabbed it we slipped a lasso down the line and over its neck. In next to no time we had captured five, and we discovered that no matter how lordly albatrosses on the wing may appear, on hard planks they are frustrated. They waddled dismally about unable to take off. In the sea they paddle swiftly forward beating the water with their strong wings until they gain sufficient momentum to rise. On our unsympathetic decks they were helpless.

We held an albatross race on the main deck, and awarded the winner an extra large piece of salt pork; we dressed one up in a cotton vest and a pair of bathing trunks to have his photograph taken. The marine biologist whose interest was of a less sporting nature, ringed their legs with thin metal strips bearing the ship's name, the date, and the latitude and longitude; then we rewarded them with more salt pork—which was a most unpopular dish on board anyway—and gave them a start back to their native element from the main top. But as they circled round us afterwards they had lost all their glamour in our eyes.

Maybe in revenge for the humiliation we had heaped upon them they invoked the wicked spirits of the sea, for we saw no more fine weather until we reached Australia.

We were by this time, however, fairly competent seamen. We had left England a crowd of green landlubbers, and in the early stages of the trip we had two chief perplexities: the ropes and the compass. Those of us who had been in the Boy Scouts knew the sixteen main points of the compass; but the fact that we were expected to know the names and positions of the half and quarter points simply appalled us; and for the first few weeks it was common practice, when one man went to relieve another at the wheel, first to receive the course, "South-south-east a half east," for example, and then inquire which particular black dot on the compass card this might be? This method worked very successfully, until one dark night, Willie—our short-sighted carpenter—lost his black dot when the ship swung badly off her course, rechose the wrong one, brought the ship up into the wind, set the foresails aback, gybed the main and spanker, and almost took the masts out by the roots. It finished the dot system.

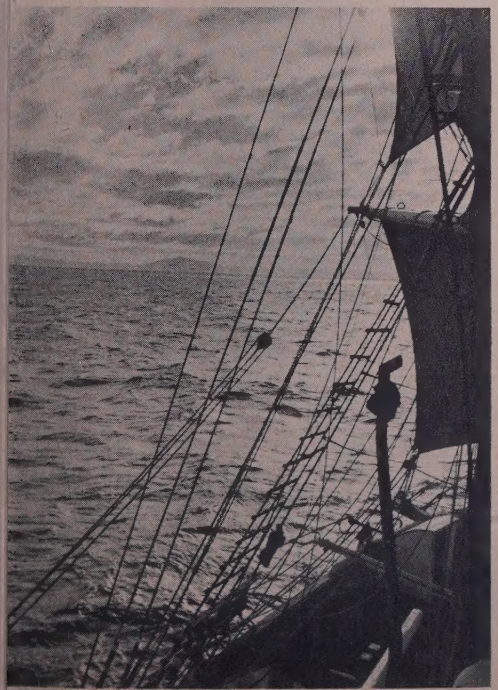
Our second affliction was the ropes. And they were an even worse trial. Our reactions when told to stop off the lower topsail buntlines, or make up

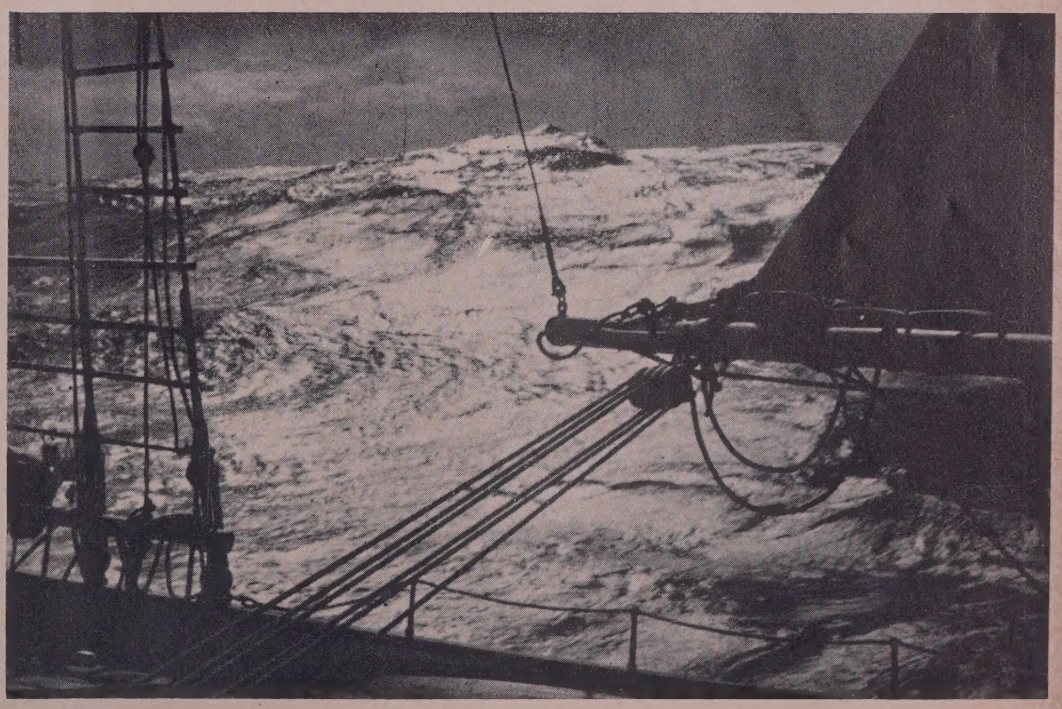
REEFING THE TOPS'LE

It needs strength as well as nerve to reef a sail on the upper tops'le yard during a blow in the Roaring Forties. The sailors must balance themselves precariously on a narrow foot rope while they struggle with the heavy, sodden canvas.

HEAVE - HO!

All hands were often called on the *Cap Pilar* as she drove along for weeks on an average of twelve to thirteen knots with only storm canvas set. Here some of the crew heaves lustily on the top gallant halyard during rough weather.



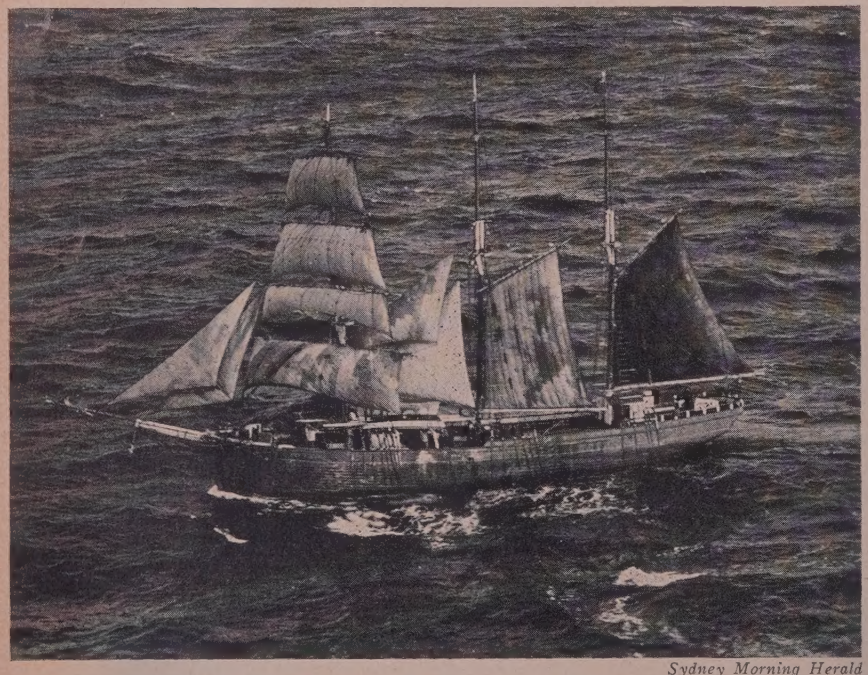


TASMANIAN LANDFALL

After seven cold and stormy weeks land was sighted in the twilight of the Southern Hemisphere. The peak seen faintly in the picture at the left is near the coast in New South Wales.

BEFORE THE VOYAGE

Lying becalmed in False Bay near Capetown there was very little for the crew to do except wait for the wind which would soon carry them into the Roaring Forties. There is plenty of tough weather ahead on the ocean trail that has been followed by sailing ships since the days of Captain Cook.



Sydney Morning Herald

NEARING SYDNEY HARBOR

After fifty-seven days at sea the *Cap Pilar* sighted the huge arch of Sydney Bridge rising above the land. The crew of the tiny, salt-caked three-hundred ton barquentine were about to know the satisfaction that only deep water sailors can experience—the safe arrival at port after a long, stormy voyage.

the gaskets, were about the same as might have been those of an Eskimo fisherman given the same orders in Hindustani. For the mate to bawl, "Outer jib downhaul," for example, was to throw us into a panic of bewilderment. One man would think he knew where it was, and the rest of us would all herd after him, pulling at ropes without discrimination but with eternal hope, until at last someone pulled the right one. With our mis-directed zeal it is a wonder we did not pull the masts down.

In the tropics, however, the skipper made it known that every man was going to be put through an examination. He added that unless everyone on board knew all the ropes and every point of the compass before a week was out, we would sail up and down like a Portuguese-man-of-war, until we did. We learned very quickly after that.

In the Westerlies this knowledge was more than necessary; it was indispensable. And the weather was worse than bad, it was barbarous. The days were short and grey and cold. Each dawn the light would grow in a thin grey haze from under the horizon and filter into the dark skies. Then, gradually growing stronger, it would touch with a drab brush the wet decks and stark masts, the sodden wind-bulging canvas, and the huddled figure of the helmsman and officer of the watch pacing the poop, beard rimed with salt, inevitable cigarette between his lips, his eyes on the grey, limitless surging of the sea.

The cook had perhaps the worst life. His day started in pitch-darkness at six o'clock in the morning, and finished washing up the supper things at about nine at night.

The galley lay in the well of the foredeck, and day after day for weeks on end this deck was awash. The water supply lay fifteen yards away along the main deck. It

was a perilous adventure in rough weather with a bucket to the pump which had to be primed. And the weather was always rough. But the chief bit of hell in the galley was the way in which the pots careened up and down the stove when the ship rolled. Just when the cook was well advanced with a meal a tremendous wave would stand the galley up on end, the pots would all break free from their choking bars and go sliding madly backwards and forwards throwing their contents everywhere, and even capsizing completely. He would grab his most valuable dixie, and hang on to it while the steam rose around his face and the ship bucked like a bee-stung broncho. Pans would stand out on their hooks from the walls at abandoned angles, then fall off altogether, and in a few seconds his once orderly galley would be chaotic.

The cowl on the galley stove pipe provided yet another problem. When the wind blew the right way the stove top became red hot, and when it blew from the wrong quarter, it blew down the pipe, blew out the fire, and filled the galley with acrid smoke. From one particular direction no twisting and turning of the cowl could remedy this condition; the only thing the cook could do was to sit on the hatch and think up excuses to offer the watch below when they found there was no hot meal for them.

The foc'sle developed a cataract of leaks, and a medley of tins and buckets were festooned from the deckheads to collect the drips. There was often hail on the decks, occasionally snow, and the wind invariably blew at a force which ignored all nautical scales of wind measurement. For weeks on end we drove along averaging twelve and thirteen knots with only storm canvas set. All hands were often called. And for all its romantic associations in the layman mind, "All hands on deck," was to us a nauseating cry. Someone would lumber down the companion-ladder among the sleeping watch and switch on the light—electric light was the only amenity of our sailing ship. "All hands—all hands on deck. No time for oilskins. Look alive there." A horny hand would rudely jolt one from sleep. It had to repeat the procedure many times with Willie the Carpenter because he slept the deep sleep of the Sleeping Beauty. Only no princely kiss would wake him; the only effective method was a severe thump in the stomach; and after beating three or four times upon his torso, he would open bewildered eyes, and say, "Wass-marra. S'oright. I'm wake," and then fall straight back into a coma. We were convinced that if Willie had been left with no one to beat upon his stomach he would have gone on sleeping until he starved to death.

We would throw coats over our pyjamas, jam our feet into seaboots, and pound up the companionway. On deck it was invariably pitch-black, and the ship would be rolling heavily. Out of the lee of the galley the full force of the blustering wind would hit us, and every now and then a wave would smash across the well of the foredeck. On the poop the skipper would be giving his orders. Often one of the squaresails had to come in. And then it was up the shrouds in the blackness, wind glueing our clothing hard against us, pressing us tightly into the rigging.

As long as you grasped firmly at ropes which were meant to be grasped firmly, and did not clutch at running tackle or shadows, the dangers of falling were negligible. With a steady wind in her canvas the ship naturally had a strong list to lee-ard, and remained in that position, except for an occasional bad-tempered jolt. One hand for yourself, and one for the ship, was the procedure we had learned, but if the sail was ever to come in it meant both hands for the ship, and two footholds and a belly-grip across the yard for yourself. For a few minutes it was an

(Continued on page 34)

CAPTURED IN THE SOUTH ATLANTIC

These albatrosses were lassoed when they were attracted to the ship's side by salt pork during calm weather. The gray plumage on the top of the wings indicates that these birds are not much more than a year old. Nonetheless, the wing spread of some of them is as much as ten feet.

THE SNAKE STONE OF NEPAL

Mounted like a goblet on a chased gold plate, this royal bezoar stone dates from the early eighteenth century in Portugal.

By Hassoldt Davis

With photographs by the author.

IT WAS IN the jungles of Nepal, that fabulous, forbidden country between India and Tibet, that we of the Denis-Roosevelt Asiatic Expedition met the three old men. They are Tharus, great-muscled aborigines who looked more like hairless gorillas than human beings. There was nothing decadent about them as we had been led to believe. The awful *awal* fever of this district, the malarial mosquitoes, the sopping weather and the hordes of beasts—tiger, leopard, elephant, rhinoceros, poisonous snakes—seemed in no way to have troubled this strange Mongol tribe.

We were in the *terai,* the swampy wilderness at the foot of the Himalayas. We sat before our tents, limp with the heat, and watched our visitors approach through the green shadows of the jungle evening. They were followed by a pet gazelle that was blind in one eye, apparently, for its lid drooped low. Our interpreter welcomed them. They had come to trade, they said. One had a small elephant tusk across his shoulder. One had an antler of the deer so prized by Orientals, for its shavings can supposedly be brewed into a formidable love potion. And one, the oldest of them, had some tiny thing in his hands which he seemed reluctant to disclose.

We bought the antler and the tusk for, literally, a mess of pottage, in that our currency was canned vegetables and meat, but the third old man could not seem to make up his mind to part with the precious thing he had. Slowly his hands came open and he held his prize before us.

"Snake stone," said our interpreter. "Very magic."

I could scarcely conceal my excitement as I handled it, for I knew its rarity. It was about the size of a pullet's egg, light in weight, smooth, dark grey with minute flecks of golden brown. Though it seemed slightly sticky the surface could not be rubbed away.

Neither the Academy of Medicine nor the American Museum of Natural History possessed a specimen of this legendary substance which kings once had purchased for fantastic sums, believing it a sterling remedy for snake bite, rabies and almost any poisoning. I bought mine eventually for a quart and a half of castor oil. The Tharus moved off to their jungle, but the gazelle seemed to hesitate, stared at me with its one good eye and partially raised and lowered the lid of the other in what looked exactly like a wink.

The snake stone, or bezoar, or mad stone as it is called in America, is not a stone at all but a growth that sometimes occurs in the bodies of herbivorous animals. A concretion or calculus it is called by scientists, and most nearly resembles the human gallstone. Just as the pearl in an irritated oyster is built up gradually over some foreign nucleus, so the bezoar is built in animal intestines, though it has occasionally been found in the throat. Like the pearl, it is extremely rare. There are three kinds recognized, the Oriental, composed principally of resinous organic matter arranged in concentric layers, the Occidental, which is found in the South American llama and consists chiefly of calcium phosphate, and the German, found in the chamois, which is made up of hair or vegetable fibres cemented together by the body fluids.

It is an odd thing that the method of using the snake stone is invariable throughout the world and has not changed in two thousand years, since the days of the Persian Empire when it got the name *padzahr,* which meant "expel poison." Our word "bezoar" is derived from it. As its chief attribute is that of absorbing liquids, it is placed against the wound, to which it will adhere until it is filled with blood and, supposedly, poison, then drops off. It is then washed in milk and replaced on the wound. This usually continues until the patient dies, if the poisoning has been severe, for the efficacy of the stone is almost nil.

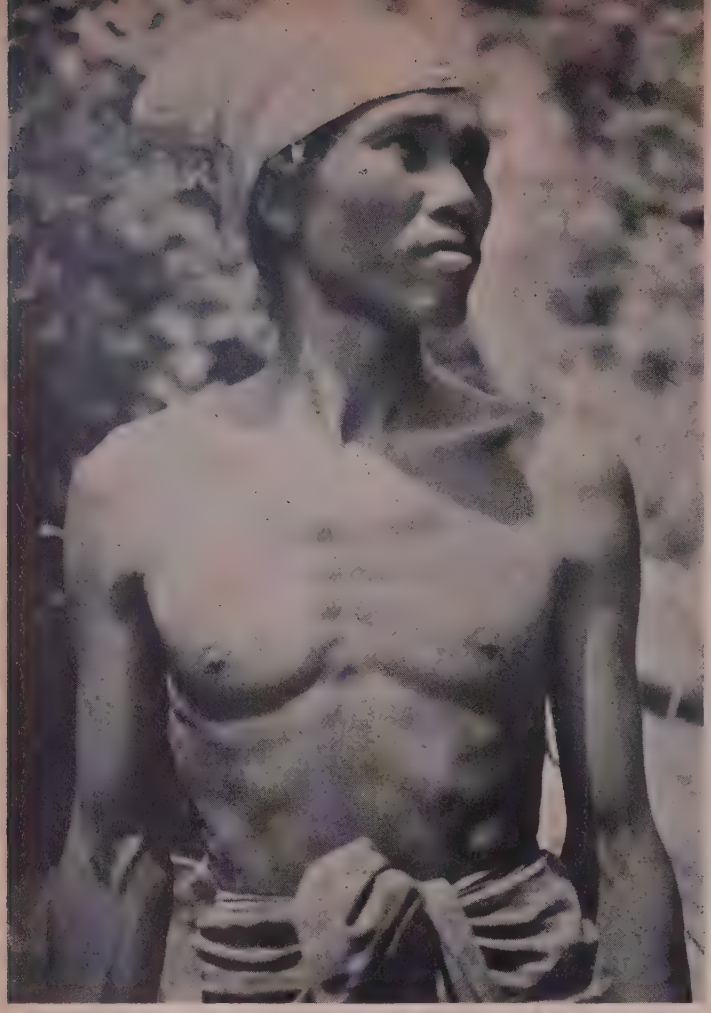
For many centuries the only rival to the bezoar was the Sicilian agate, called Achates, which even Pliny seemed to approve in his *Natural History:* "People are persuaded that it availeth much against the venomous spiders and scorpions, which property I could very well believe to be in the Sicilian Agate, for that so soon as serpents come within the air and breathe of the said province of Sicily, as venomous as they may be otherwise, they die thereupon." And the friar Bartholomew, author of a famous medieval encyclopedia, claimed that eagles placed the Achates in their nests to keep serpents from eating their eggs.

The great Moses Maimonides in the twelfth century wrote that the best bezoar, the true one, came from the gall bladder of a deer or from its eyes. Present day belief in the latter theory I was personally to attest.

Queen Elizabeth had such faith in the virtues of bezoars that she carried one or several of them with her on all occasions. In an inventory of her crown jewels there is the item: "Also one great Bezar stone, set in goulde that was Queen Elizabeth's, with some Unicorne's Horn, in one paper; and one other large Bezar stone, broken in pieces, delivered to our owne hands, by Lord Brooke the two and twentieth day of January, one thousand six hundred and twenty and two." The bezoar was to be swallowed if ever the Queen grew ill after wine and suspected poisoning, but as the stones belonging to royalty were always the largest procurable, sometimes three inches long, the cure must have been worse than the affliction.

Any sovereign had reason in those days to be suspicious of his wine and most of them kept handy a bit of "Unicorne's Horn"—probably the horn of the narwhal—to dip into the wine before tasting it. If there was poison present the color of the horn was supposed to change. Charles IX of France was particularly cautious in this regard. He was such a suspicious fellow that he not only doubted his cook, who might conceivably poison him, but he even doubted the horn and therefore kept by him a large bezoar in case it failed. When Ambroise Paré, the royal surgeon, flatly denied that the stone was any use, the king retorted that he would prove it. So he sent for his provost and asked if there was any prisoner in the dungeons who merited death. There was indeed, said the provost, a cook, no less, who had stolen two silver plates and must therefore be strangled on the morrow.

"The king told him," Paré writes, "that he wished to experiment with a stone which they said was good against all poisons, and that he should ask the cook after his condemnation if he would take a certain poison, and that they would at once give him an antidote; to which the cook very willingly agreed, saying that



This Nepalese said he had been bitten three times by poisonous snakes in the lowland swamps. Each time, he maintained, his precious bezoar stone saved his life.

he liked much better to die of poison in the prison, than to be strangled in view of the people. An apothecary gave him a certain poison in a drink and at once the bezoar stone. Having these two good drugs in his stomach, he took to vomiting and purging, saying that he was burning inside, and called for water to drink, which was not denied him. An hour later, having been told that the cook had taken this good drug, I prayed the provost to let me see him, which he accorded, accompanied by three of his archers, and I found the poor cook on all-fours, going like an animal, his tongue hanging out from his mouth, his eyes and face red, retching and in cold sweat, bleeding from his ears, nose and mouth. I made him drink oil, thinking to aid him and save his life, but it was no use because it was too late, and he died miserably, crying it would have been better to have died on the gibbet."

Paré's autopsy showed that the cook had been given bichloride of mercury, a corrosive which even modern treatment can rarely neutralize in time to save the patient's life. The king was furious, called his prize bezoar a counterfeit, flung it into the fire and immediately advertised throughout France and Italy for an authentic one.

The first Governor John Winthrop, by no means a credulous man, for years sought a bezoar as antidote to the bite of New England snakes, according to Oliver Wendell Holmes' *Medical Essays,* and was delighted to receive one as a gift from Governor Endicott. Doubtless the good doctor was ironical when he said: "I hope it was genuine, for they cheated infamously in the matter of these concretions."

That physicians should have believed in the bezoar is not at all remarkable when one remembers that usnea, that grisly nostrum, was sold in every pharmacy until the nineteenth century and was seriously listed in the first edition of the Encyclopedia Britannica. Usnea was a moss, but a very special moss; the moss scraped from the skulls of criminals who had died on the gallows. An infusion of it was said to be particularly good for those suffering from tuberculosis.

My own ancestor, John Carver, who kept a grocery and grog shop at Lincolnville, Maine, in 1837 recorded in his account book:

Willy Higgins, Dr.

1 gall holand gin	$1.00
2 oz. sinnamon	.16
1 pint rum	.06
¼ of old hyson tea	.25
1 pound saleratus	.11
1 Indian Mad Stone	5.00

I was interested to note that sales to Willy Higgins, very frequent before this date, did not continue after it. More than likely the patient

A victim of poisoning is here being treated by the application of a bezoar stone. The woodcut is from the *Horus Sanitatis,* 1843.

Until the nineteenth century many medical men continued to believe in the efficacy of the bezoar stone. This illustration from the *Histoire des Drogues* of 1694 shows a bezoar goat with a bezoar stone beneath it.

In the lowlands of Nepal this venerable conjuror praises the virtues of bezoar stones. When he secures one of the precious objects there is no lack of gullible buyers who will pay a good price for it.

died, of either grog or poisoning which the mad stone could not cure.

By the beginning of the nineteenth century the bezoar, in America, had started to wane in popularity, but as late as 1933 there appeared an advertisement in the Warren County *Times* of Tennessee offering one for sale. Its owner, the Rev. R. J. Tucker, claimed that it had "a proven record of cures." And the Indianapolis *News* states that a bezoar—or mad stone—has been owned by the Bundy family for several generations, but this is really only half a stone. A tribe of Carolina Indians to whom the head of the family did a good turn in 1815 split the original stone in two, giving half to their white friends and keeping the other half for themselves. These bezoars in early America were used less for snake bite than for the poisoning of rabid dogs and wolves. The old Bundy bezoar is now kept in a vault and valued at $5,000.

The five dollars that John Carver charged for his mad stone was little enough, considering its rarity, and I commend his beneficence. He died poor but honest, in his own small way. The value of a fraud is of course commensurate with the degree of the client's belief in it.

Only twice, to my knowledge, has the bezoar been subjected to scientific tests, once by Michael Faraday, in 1849, who analyzed his specimen as charred bone which had been soaked in blood and baked, and again in 1905 by Dr. H. C. White of London who affirmed that his bezoar did indeed adhere to wounds and did absorb a certain amount of venom. But he also said emphatically that snake bite would be more safely treated by antitoxin, and hydrophobia by the Pasteur method.

Like the Indian rope trick the method of procuring the bezoar is always witnessed by someone's cousin's friend, but most stories are similar to that common in the Punjab of India. There I learned that when a goat or antelope sees a snake it kills it, if it can, with its sharp hoofs, then eats it. The poison of the reptile induces fever in the animal, and in a frantic effort to cool off it races from stream to stream till it reaches the high altitudes of the Himalayas where it plunges into an icy lake. There the poison, which is vitiated by now, is frozen into a solid bead, called a *manka,* and the animal either spits it out upon the shore or squeezes it from its eye before it perishes. The lucky finder of the bezoar will replenish its powers from time to time by strapping it to the eye of the family goat.

Remembering these tales I cherished my Nepalese bezoar for exactly a day and a night. Whatever its intrinsic value, I knew I had a treasure of historical and ethnological interest which the museums would give their lions' eye teeth for. But on the evening of the day I obtained it an incident occurred to test its efficacy and prove that its value to the natives was quite as great as to me.

I was some distance from camp and puttering around what was the bane of the expedition at that period, what Armand Denis and Leila Roosevelt referred to as my private temple, for I had found these ruins of exquisitely carved wood in the midst of the Terai, the thickest jungle of Nepal, and day after day had held up the progress of the expedition by promises that on the morrow I would be able to prove definitely that the temple was a relic of Naga-worship, the ancient worship of the snake god, Naga, which apparently was unknown in these parts. This was purely a personal project, and a selfish one which our leaders were most kind to tolerate. After all, we did have an appointment with the Maharajah of the country, and the first film of Nepal still to make.

The rotting wood of the temple lay all about me, with here and there a complete, carefully executed design which proved that at some time the inhabitants of this wilderness had been artisans of culture, certainly a different breed from the Tharus who were sparsely settled here now. Frequently I found a roof strut which I was convinced represented the body of the snake god, but of each one the head was missing, sometimes rotted away, sometimes cleanly severed. It was for the heads that I sought, to prove my theory, and as I did so a second wonder dawned upon me: that the early priests might have deliberately decapitated their

(Continued on page 30)

The horn of the mythical unicorn, probably derived from the elephant or rhinocerous, was highly esteemed in the court circles of Europe in the sixteenth and seventeenth centuries as a remedy against disease and poisoning. The great physician, Ambrose Paré, from whose treatise this picture is taken, was viciously attacked for declaring the substance useless.

A stone supposed to grow in the head of a toad was held to be an antidote against poison. This belief gives meaning to Shakespeare's lines: "Which like the toad, ugly and venomous, wears yet a precious jewel in its head." The woodcut dates from the fifteenth century.

According to an old popular belief the cockstone was found in the gizzard of a cock which had been caponized when three years old and had lived seven years longer. The stone was supposed to bring luck in gambling and love. This fifteenth century woodcut shows the extraction of the stone.

THE FLOOR OF THEIR BARRACKS THESE CHINESE CADETS MAP A CROSS COUNTRY FLIGHT.

ARIZONA'S FLYING CHINESE

By Shih Yung Wang

Photographs from the U. S. Army Signal Corps

SINCE THE TURN of the century China has sent hundreds and thousands of students to the United States—to Harvard, to Yale, to Cornell, to Stanford, to the Massachusetts Institute of Technology—and she has welcomed them back with a deep appreciation of their Western learning. But no groups of young Chinese men have been sent across the Pacific with so much hope, nor so passionately welcomed on their return, as those whose goal was "somewhere in Arizona" for the finishing course in aerial warfare given by United States Army instructors.

Those students in aviation who have come to this country since 1941 are the cream of China's youth. All of them have had American instructors before. Some were part of that company which marched a thousand weary miles to Chungking after the Hankow School was bombed by Japan. Some of them got their wings under General Claire Chennault at Kuoming and already have the daring of the Flying Tigers in the way they handle their fighting planes.

Arizona is a long way from China. But it saved time to bring the students to that beautiful desert country where nearly every day is a flying day, and very little time is lost in winds and rain. Time is so vital to China and the Chinese students can not stay long. They are due back as soon as possible; they were needed desperately before they ever started on their journey to America. Somewhere in Arizona, on Thunderbird Field or elsewhere, the Chinese fliers have found training planes enough, and gasoline enough for them to fly their full quota of hours every day. No air raids interrupt them. No empty gasoline drums delay them. And hour after hour, flying with the best instructors, they learn the mastery of the air.

Fledgling pilots of eleven different nationalities are being trained at Thunderbird. None are cleverer, more disciplined nor more passionately anxious for action than the young Chinese. The course these cadets must take is divided into three stages of nine weeks each, known as the primary, the basic and the advanced schools. Nearly all the Chinese boys go through all three stages, even when they have come to America with army life behind them, and their wings secure. They know they are going back not merely to fight but to teach. "We must know *everything*," said one of them. "China needs everything and we dare not risk even the slightest carelessness in knowing how to handle our planes."

Every cadet has some work in the class room and some on the field. Each one averages four hours a day in the air. The plan is to have each one accumulate at least 185 hours of flying.

Ground school training is more of a grind for the Chinese students than for most of the others. It's all very well having learned English at schools and colleges, but what they talk on those Arizona air fields is a tongue few men in the world knew at all until this war. The technical terms and idiomatic expressions that are used in American text books make many a cadet groan, to say nothing of the words and terms that spring up with new inventions and new experiences on many battle fronts every month that passes. The Chinese student adds to his course, therefore, a course in technical English, and his instructor goes along with him as interpreter as often as possible. The complications that can arise out of language differences are endless as less exigent travelers for centuries have found.

The Chinese cadets are serious. They are also young. They love fun. They go for volley ball and basket ball in a big way, and are so expert at the new games that they sometimes have trouble finding native teams to match them.

Arizona is a state with a considerable Chinese-American population, and the cadets lost little time in meeting Chinese-American girls. But there, too, they found language complications, for the girls were daughters of emigrants from Canton, and the cadets came from every province in China, many from the northern occupied cities and provinces. The girls spoke Cantonese. The boys spoke Mandarin. When English did not suffice the sign language and laughter were used.

No one has compiled a book from the letters the cadets write home from their college for aerial fighting. But what astonishes them most and what they write home about are just the things Americans take for granted and find neither funny nor awesome. Did you know that American drug stores selling cosmetics as well as pills and syrups are outlandishly comic? Did you know that the cafeterias are an astounding feature of our culture? Did you know that the enormous public dining rooms of Arizona are fabulous mysteries? The first letters back to Kuoming are full of such observations. Later letters devote more space to explanations and less to astonishment. A cafeteria, the Chinese students point out to their friends at home, is a method by which a country with high rates of wages arranges to give inexpensive food to a great many people who work in its large industrial plants. The customers pick their own meals and lighten the service. It is one of the most satisfactory ways of providing meals in a Democracy, and the machines and turn-

UNDER THE DIRECTION OF AMERICAN INSTRUCTORS CHINESE STUDENTS ARE GIVEN FLYING TRAINING IN ARIZONA. LATER THEY WILL GO INTO SERVICE IN THE EAST.

stiles, coffee urns and other gadgets are all worth studying.

The Chinese cadets are very much interested in the material goods that men of different economic status have in common. Farmers and unskilled laborers have radios in America. They go to see the movies. That does not happen in China . . . yet!

The Chinese boys study roads and tunnels. They are interested in every possible means of communication. What they cost and what they achieve are described for the people in China with painstaking care.

Already several classes of graduate pilots have come and gone. They return to China as members of a fellowship; they are something new in the way of crack regiments and picked squadrons. They are an élite to whom much has been given and from whom much is expected. Every hour of their learning must yield abundant results when they rejoin the army of their country which for five long years has been defending the homeland. Millions of refugees, peasant craftsmen who have moved their machines thousands of miles inland under Indusco direction, the heroic builders of the Burma Road, the fighting women and children, the singing soldiers of China—all welcome them back.

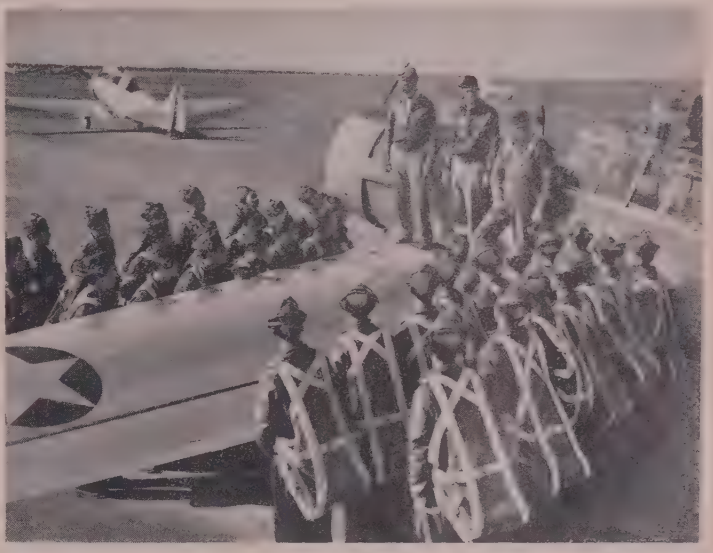
The Chinese sometimes seem more serious and mature than American boys, but that is because all of them have seen some tragic part of the Japanese-Chinese war. But teamed up with American boys, they quickly recapture their normal gaiety.

The new-comers have been moved by what they have learned of the Chinese in America. At home in China they may have thought that "all Americans were rich" and had not quite realized what it meant when Chinese-Americans have sent back great sums for China Relief. When they see with what toil in fields and laundries their fellow countrymen have earned the money they gave so generously, they are very proud of the patriotism of the Chinese in this country.

The young Chinese aviators have been taken to heart by all on the West Coast who know them, as well as by their fellow students. And the young Chinese like to think that, while they are learning all America can teach about modern aerial warfare, that they can help to reward their instructors by teaching them some of the history of China. It is hoped that a bond is being created between two freedom loving nations which will mean in the future an era of two way travel.

"Come again," says Arizona.

"See you in Chungking and Shanghai," Chinese cadets call back as their trains pull out.



Standing on the wing of this plane three American lieutenants give instructions to a group of eager Chinese flying students who have just arrived in Arizona.

After a hard day's work Chinese cadets like to listen to the news broadcasts on the radio. In the background there is a chart showing designs of Axis planes.

The maroon and cream-colored blossom of the Stanhopea tigrina smells like delicious milk chocolate.

ORCHID

After orchids have been collected they must be sorted, cleaned and classified.

Luck plays an important part in orchid hunting because the plants are colorless in appearance when they are not in bloom. These are the lace-like blossoms of *Epidendrum ciliare.*

Found on the slopes of Mount Orizaba this orchid resembles the lily-of-the-valley found in the temperate zone.

WHEN THE ORCHID bug bites, it bites hard.

And the orchid-growing epidemic is spreading. Joe Smith has a dozen plants growing in a glass box in his living room and Judge Brown has a glassed-in lean-to on his garage. Ex-Governor Johnson has three greenhouses full.

Some orchid hobbyists, ourselves included, like to collect their own plants in the wilds. Because of the many species to be found there, Mexico is a happy hunting ground for the likes of us.

People used to think that orchids grew in steaming tropical jungles; that they were the rankest of parasites, sinking their roots into other plants and slowly and insidiously sapping the lives of their helpless hosts.

Actually, only a few orchids grow in swamps. All the truly worth while types of tropical orchids prefer to grow on mountainsides, away from the heat of the miasmic jungle. Many scorn any type of shelter and grow on bare rock or in tall treetops where they are exposed to intense sunlight. Some, indeed, cannot live in altitudes of less than eight thousand feet. Others, brought under cultivation in this country, steadily refuse to bloom at low levels unless coaxed and pampered in specially built, air-conditioned greenhouses.

Nor are orchids parasites. Botanically speaking, most orchids are epiphytes—that is, they are air plants. While they grow on trees they do not harm their hosts. Their vast numbers of roots serve only as anchors; they take no nourishment from the tree to which they attach themselves. Epiphytic orchids live solely on air, water and sunlight, plus the small amount of decaying leaves and debris that inevitably gather about their root systems. Terrestrial orchids, of which there are many types, send their roots into the soil as do all ground-growing plants.

Orchid collecting became our hobby after we learned, to our great surprise, that there are many real orchids to be found in our own home state of Florida. After ransacking the Everglades for specimens of native Florida orchids, we turned to broader fields in Mexico. It still gives us a pleasantly superior feeling to drive homewards, with the back of our car overflowing with specimens.

"What are those funny looking plants?" people ask us.

And then their eyes bulge when we calmly answer, "Orchids."

As a matter of fact potted orchid plants are not especially prepossessing in appearance. We are inclined to agree with a non-orchid-fan friend who pointed to some Cattleya pseudobulbs and called them "nothing but glorified onions." He changed his tune, however, when the "onion" bloomed—a delicate lavender flower with a frilled lip of purple splashed with gold.

Mexico, with her more than 550 species of orchids, is an orchid hunter's paradise. It is not until you have seen orchids growing in their native haunts that you really begin to appreciate them. But, since this means clawing your way up mountainsides or following an Indian guide as he hacks a path through the jungle for you with his machete, not many people have the opportunity of seeing orchids growing and blooming naturally.

Mexican orchids have a great variety of size, shape and

HUNTING IN MEXICO

by Edna and William Evans

habitat. There are miniature orchids with perfect blossoms no larger than a pin head, and there are giants with blossom spikes eight and ten feet long. *Laelia anceps* has no scent at all while *Stanhopea tigrina's* cream and maroon flower smells like delicious milk chocolate. *Catesetums* look like little green dwarfs from a Walt Disney creation. *Sobralias* have delicate purple flowers that last but a single day while *Epidendrum vitellinum's* coral-red sprays remain fresh and beautiful for two or three months. Some high-altitude *Odontoglossums* refuse to bloom unless there is a frost.

Whatever else can be said about Mexicans, they are true flower lovers. In orchid territory, the meanest Indian hovel will have orchid plants growing around it. We know of one town where the people devote almost their entire time to growing orchids and other flowers. In fact, the official name of the town, Fortin de las Flores, bears this out. Fortin, in the State of Vera Cruz, is a town of flowers and flower lovers. There are blossoms everywhere, growing in tropical profusion, while above them towers the eternally snow-capped cone of Mount Orizaba.

Fortin is famous for its flowers, attracting tourists and native Mexicans alike. No sooner does a car or bus stop than its occupants are pelted with flowers.

"My gift to you, lady," pants a dark-eyed child, tossing a flaming hibiscus into your lap.

"My name is Ignazia," adds another, waving a blue lily. "I have this for you."

They swarm over the running boards.

"My name is Alicia," you hear. "My name is Asuncion—I can take you to the gardens."

"Look, lady."

Through the window is pushed a section of hollowed out banana tree trunk, filled with orchids, camillias and gardenias—a twenty dollar corsage for a few cents, U. S.

If you have the necessary governmental plant permits (an export one from Mexico and an import one for the United States) you can buy great bunches of orchid plants that are growing in backyards at Fortin. Or, if you prefer to get your orchids first hand, you can hire a guide and go into the mountains. On the way you pass through a thick fringe of coffee fincas, pineapple fields, banana plantations and the inevitable corn patches, for the tropical Orizaba valley is intensely cultivated. But once beyond this belt of civilization the true jungle begins and you can start looking for orchids—if you still have breath enough left after climbing what someone has, jokingly no doubt, called the "foothills" of Orizaba.

Although Tamazunchale, in the State of San Luis Potosi, is about three hundred miles further north than the valley of Orizaba, orchid hunting in the mountains around this little Indian town produces surprising results. Usually, in plant distribution, a shift of three hundred miles and a variation in altitude of over 1,500 feet will have quite a noticeable effect on the plant population. However, the orchid flora around Tamazunchale almost duplicates that of Fortin, except that the Tamazunchale plants are much sturdier. Almost without exception the plants we encountered there had larger pseudo-bulbs and put out bigger flower

(Continued on page 82)

Orizaba Valley is thickly cultivated with coffee fincas, pineapple fields, banana plantations and the inevitable corn patches. Beyond this region lies the true jungle which is the orchid hunters paradise.

ajorca had a keen eye for orchids and he could ways spot the best in the tallest treetops. Here, owever, he is gathering minnows for a fishing expedition.

he ornately decorated towers of the cathedral Tasco dominate a mountainous region where many beautiful species of orchids thrive.

All cable is wound up on reels. The king reel at the right can hold miles of cable.

The boats of the Mine Planting Service have fifty caliber machine guns for protection against enemy planes.

Martin Sheri

As the mine planter stands by the small boat tosses it a heave line to which a mine cable is fastened. The planter is going to take up a defective "pill."

Martin Sheridan

One of the soldiers with the Coast Artillery Corps at Fort Monroe, Virginia, climbs aboard a sphere of undersea destruction to do his bit at paint scraping.

Signal Corps, U. S. Army

PLANTING A VICTORY GARDEN IN THE SEA

by Martin Sheridan

Martin Sheridan

THE GREATEST, most unique victory garden in the United States is planted on acreage near our key coastal cities. The gardener was our Army; the planting began on December 8, 1941, from small gray steamers.

Straight through the foulest weather, through fifteen-below-zero temperatures, through snow, ice and gales that numbed their bodies, soldiers worked sixteen, eighteen, even twenty-four hours a day. They missed meals and shore leaves—Christmas and New Year's Day were merely December 25 and January 1 on their calendar. Watersoaked and with icicles hanging from their beards and clothing they went on working.

Just recently the collective gardeners paused to ponder over a busy year. Their seeds are ready, waiting to germinate. And although they may never attract a harvest, the work is a success. For it is an unusual species planted in the Army's garden. Officially the species is catalogued as AESC CANNE. More familiar is the soldier's translation, "ash can."

The AESC CANNE is a black seed, bigger than any put into the earth. It is a barrel-like agent of destruction for any enemy who dares to approach our restricted waters and our vital harbors.

The task of mining our coastal harbors is the job of the Army's little known Mine Planting Service. Oddly enough, the AMPS consists of sea-going soldiers (they don't receive extra pay for service at sea as sailors do) who man the ships and plant the mines. Under the command of the Coast Artillery, these men have had as much actual war duty as any branch of our armed forces. Furthermore, mine planter crews must have a knowledge of both army and navy duties since their work encompasses many ramifications of each.

The submarine mine is an invisible weapon used to the limit of its destructiveness by ourselves and the enemy. Past performances prove it to be the most destructive of all weapons in naval warfare.

Army ash cans are electrically controlled from shore or harbor bases, while the Navy eggs are of the magnetic or contact type.

Contact mines, which are buoyant black spheres, must be struck before they detonate. Several soft metal horns extend from the top half of the weapon. By bending or breaking these extensions the electrical circuit is completed to the

Martin Sheridan

While Chief Warrant Officer, I. S. Hansen, skipper of the mine planter, handles the wheel, Captain G. G. Lipke calls out instructions over the ship's public address system.

detonators and the charge of TNT explodes with disastrous results to the ship running into the device.

The contact type is the simplest and most inexpensive mine in use. It is not recoverable except by sweeping. Enemy mine sweepers can easily sweep up these mines, and the paravane, now standard equipment on many merchant ships plying waters known to be mined, can sever the cables mooring the weapon to an anchor.

Although I've traveled on submarines, turtle schooners, fishing trawlers, sardine carriers, luxury liners and pleasure cruisers, I can truthfully describe the activities aboard an Army mine planter as requiring a greater knowledge of seamanship and navigating skill than any other vessel.

During my trip on a mine planter, the engines of the twenty-year old ship were given a workout such as I've never witnessed. The Bells of St. Mary's had nothing on the engine room's bells which pealed out their abrupt melodies every few minutes.

We sailed from an Eastern port one morning. Chief Warrant Officer I. S. Hansen, skipper of the ship, moved calmly across the pilot house as he directed the man at the wheel.

"Ea-sy," he drawled quietly.

"Easy, sir," repeated the helmsman.

"Steady as she goes."

"Steady as she goes, sir."

"Half right," whispered Mr. Hansen as gently as a romantic young man to his fiancée. After watching him in action it was easy to understand why his crew called him a "swell fellow."

Before the war the Army had an undisclosed number of mine planters in commission. Many additional planters have been added to the Army's fleet in recent months.

"It isn't generally known that the Army had more ships in operation than the Navy until the attack on Pearl Harbor," Mr Hansen revealed. "Of course the Navy's tonnage was greater than ours."

Mr. Hansen and the other ship's officers are khaki-clad warrant officers. Youthful Captain G. G. Lipke is in charge of mining operations.

"Our 'pills' are strictly a defensive mechanism in these waters," Captain Lipke explained. "You see, the main object in planting mines is to afford the use of the water to friendly shipping and to deny its use to the enemy."

Thousands of pounds of TNT have been planted in harbor entrances and restricted water areas requiring protection for important shipping and deep-water channels. And the first Army mine fields in history have been planted in New England waters since Pearl Harbor.

While we were loading mines and equipment at an Army outpost, six Army boats sailed for the mine fields to prepare the cables for planting. As soon as they reported "Ready for planting," we shoved off again to meet them.

Our first order of the day was to take up three mines which had registered on the shore casemate as "out of order." Numbers 3, 7 and 10 were to be replaced with new pills. Since the fields are carefully plotted on paper before they are planted, the men in the mine planting service can pick out the number 3 mine in a huge field just as easily as you can encircle the "S" in ROOSEVELT.

A boat was ready with the cable leading to the first sick mine. We passed within fifteen feet of her stern and caught a heave line to which the cable was attached. The men wound the cable on the cable reel operated by a donkey engine as the planter moved ahead slowly. Presently a rope appeared over the side.

One of the sea going soldiers prepared to throw out a little yellow feather buoy to mark the location of the ailing instrument of destruction. When the heavy anchor appeared on the surface, followed a moment later by the black pill popping into view, the buoy was dropped overboard. Both the mine and anchor were hauled on deck for examination. The planter swung around and repeated the operations in conjunction with the other assisting boat to retrieve the last two mines.

An hour later we were ready to start planting. This time the mine planter passed the heave line and cable to the other boat. The mine and anchor already had been swung out on a davit. A cable ran the length of the ship to a large figure-of-eight coil in the stern which was played out until we reached the spot for dropping the pill.

Captain Lipke called out, "Let go!" A simple tripping device released both the mine and the anchor which hit the water with a mighty splash. Hard right swung the ship's rudder and the twin screws whipped us out of the way of the newly-planted weapon.

One of the launches bounced back over the choppy water to check that everything was clear. The skipper of the planter and the officer in charge of operations yelled out special instructions to the six boats through a public address system with speakers located on the port and starboard sides, at the bow and stern.

We lost a feather buoy marking one of the taken-up mines and had to contact the shore battery via two-way radio to determine the exact location. To reach the spot meant jockeying back and forth, fighting the tide and wind and darkness.

"You can see why everyone calls our vessel a workship," Mr. Hansen smiled. "The men really have to work in this branch of the service."

When Army mines are set on observation contact they are harmless until a switch is thrown. As soon as a ship strikes a mine, that action is automatically registered on the shore casemate. Observation posts in the vicinity of the field can determine the identity of the ship so friendly vessels will not be sunk or damaged. These black pills, when set off, can sink a ship at close range and open hull plates over a wide radius.

If an enemy sea force is known to be approaching one of the coastal cities, the defending mine fields can be set for contact firing. And should the unfriendly warships attempt to sail through the fields you can be certain of hot action.

Our Navy experienced the destruction caused by enemy mines laid off our coast during the first world war when, in 1918, two

(Continued on page 33)

TENDING UNDER SEA EXPLOSIVES

The position of the mines is plotted so carefully on paper that ships can pick them up with the greatest ease. After a defective mine has been hauled up for repair a buoy with a yellow flag is dropped marking the location of the ailing mine. At the left one of the buoys with the yellow flag has just been dropped. Below a huge undersea mine is ready to go overboard in Chesapeake Bay.

Martin Sweeney, acting Signal Corps [illegible]

THE OYSTER FARMS IN THE YORK RIVER

Wire trays stretching for miles and bearing multitudes of oysters rest on the waters of the York River. Day and night they are watched by efficient wardens under whose care they thrive miraculously. Here a crew is at work thinning out baskets. The shells between the rows of baskets are there to catch the spat, or young oysters, released by basket oysters.

Dr. T. C. Nelson, oyster biologist, examines a water sample aboard an oyster boat in the York River.

Oysters are always placed in an upright position. As the season progresses some are removed to other baskets to make room for growth.

A LEGAL STORM had been brewing several years before Washington's Bureau of Fisheries ruled that The Chesapeake Corporation of Virginia was ruining the York River's ancient and honorable oyster industry.

This news traveled swiftly down tidewater Virginia that summer of 1937. On oyster boats and oyster beds all along Chesapeake Bay and the Potomac, Rappahannock, York and James Rivers, tongers and planters as well as their families welcomed the ruling.

But there was no rejoicing among owners of The Chesapeake Corporation's $10,000,000 pulp and paper mill which stands at the junction of the Pamunkey and the much wider York River. There was no cheering by the citizens of West Point, Virginia, who depended on the mill for a living. Thousands of back country farmers ruefully figured that if the mill closed down they would no longer collect "extra cash money for their pulpwood crop."

Measured in dollars the York River oyster industry wasn't one-two-three with the pulp and paper mill which had been growing and growing since 1913. But Virginians possess a profound respect for Virginian traditions. Hadn't Governor Alexander Spotswood of Colonial Williamsburg, during the romantic days of 1717, regaled be-wigged Knights of the Golden Horseshoe on Queen's Creek oysters at State Banquets in the Governor's Palace?

Three times oyster planters had vainly called for intervention by the Government. Three times solemn visaged official scientists had examined the mill's effluent or waste liquid which emptied into York River and was alleged to kill millions of mollusks. Three times the scientists had ruled for the mill people. But this fourth time the scientists had decreed that the effluent was contaminating the River and hence hastening the demise of countless oysters. The mill must cease and desist from this contamination or cease and desist from its milling operations.

Doubting that the small amount of effluent had any effect on the large body of water into which it poured the mill people went into defense action. This brought into the picture a rumpled haired, square jawed surveyor named Graham L. Evans who had seen quite a bit of the United States and developed his powers of observation as the son of a moving Methodist minister. After surveying hundreds of square miles of Corporation timberlands, Mr. Evans began closely to survey York River oysters. This survey, earnestly abetted by highly placed executives, carried him into national and natural history.

The latter revealed an interesting fact, that oysters must have clean rather than muddy brackish water from which to draw microscopic aquatic food through their gills. If the water becomes too muddy the oysters suffocate. Following this clue the surveyor who turned ichthyologist discovered government surveys showing that prior to 1890 most York River oyster beds lay well above the surrounding bottoms.

Almost simultaneously Surveyor Evans came upon a "Report on Economic Conditions of the South," prepared for the President by the National Emergency Council. This report declared: "Sixty-one per cent of all the nation's land badly damaged by erosion is in the Southern States. . . . The South is losing more than $300,000,000 worth of fertile top soil through erosion every year."

In March, 1939, the Soil Conservation Service of the U. S. Department of Agriculture had released an "Advance Report on an Investigation of Silting in the York River of Virginia." This report showed that annual loss of water volume was increasing at a rate which would fill the river to its banks in four hundred years, unless steps were taken to prevent this silting. In the meanwhile, oyster farmers were finding, on their oyster beds, the top soil lost by agricultural farmers in the 2660 square miles of the York River basin.

Comparing these official findings with what the oyster farmers found, Investigator Evans reached these conclusions:

Generation by generation York River oysters had built up these beds on the shells of their ancestors, each crop settling and having its being on top of the previous one, until they were often exposed at low tide. During these same generations Virginian oystermen tonged live oysters from the tops of these beds. The natural process was thus reversed. The beds were lowered year after year while oysters and oyster shells were carried away and nothing was put back on the beds to replace them.

As long as these beds remained high enough to keep oysters above inflowing silt the harmful effects of this careless custom were not apparent. Yet generations of York River oyster farmers had unwittingly been disposing of this "top soil," often giving it away at "bargain" prices to upland agricultural farmers for lime and chick grit, until less than one per cent of the bottom of the upper nineteen miles of York River could properly be designated as "hard."

At this point in the plot there entered a black haired, smooth faced, swarthy young scientist named Henry Vranian, son of an Armenian. Young Mr. Vranian, having graduated from the University of Richmond, began playing his part as the Corporation's chief chemist. Chief Chemist Vranian and Surveyor Evans collaborated in combating the charge of river contamination.

Planters of York River oysters were still on their trail although the oysters were deteriorating because the Commonwealth of Virginia had no conservation laws. On "public oyster grounds" the Commonwealth allowed tongers to take any oyster more than three inches long. Oysters big and fat enough to sell were thus lifted from the bivalve beds and the poor, stunted runts left year after year. No effort had been made to reverse this condition by bringing in new strains of spawners of known good quality. At times James River seed had been planted in York River, but the James is in Virginia and suffers from the same lack of conservation.

As oysters change sex—being predominantly male in early years but becoming ninety per cent females after the sixth year—and Virginia oysters reach the three-inch or selling size in two years, not enough females remained for spawning purposes. Consequently the oyster "set" had grown smaller in numbers and size each year.

The York is a tidewater river. Oysters require strongly salt water for their proper development. In freshet years oysters are therefore in poor condition. When the annual rainfall is low and salinity is high the percentage of effluent from the pulp and paper mill would naturally increase. Did that effluent condition increase the mortality of oysters?

On the answer to that question rested the future of the mill, unless by some miracle it completely revolutionized its manufacturing machinery and methods.

Chief Chemist Vranian and Surveyor

(Continued on page 30)

HARVESTING OYSTERS IN VIRGINIA

by Earl Chapin May

With photographs by Wm. Edwin Booth

Heroic methods were necessary to save the oyster beds of the York River from the increasing quantities of silt pouring into the water from Virginia's eroded land. Above, shells are being planted to catch young oysters for future seed; at the left, seed oysters are being caught for transplanting.

MAN-MADE ARARAT OF THE JUNGLE

By Captain Edward A. Raymond

With photographs by Dr. Frank Chapman

SLY PROWLER

The coati of Central America is related to our raccoon. Its long, highly sensitive nose provides it with more information than its eyes.

WHEN NOAH'S ARK settled on Mount Ararat, every animal in the world sat on a mountain-top, with water all around. When the Americans built the Panama Canal, they constructed a huge artificial lake. The rising waters herded all kinds of living things together onto a high hill. This hill now forms an island approximately one mile wide and three miles long. It is Barro Colorado, "silver reef," the modern Ararat.

Since 1923 the wild life of the island has been protected by the laws of the Canal Zone.The only buildings on it belong to the Institute for Research in Tropical America, and only scientists or others with special introductions are welcome. The value of the wild life reserve depends upon the life staying wild.

A launch is run from the Island to meet the trans-Isthmian train at the native village of Frijoles, which is the Spanish name for beans. Yes, the ticket agent could sell a ticket for Frijoles, all right, he guessed, but he'd be doggoned if he could think what anyone would want to go there for. Two train telegraphers are the only white residents. Not counting mud huts with thatched roofs, the buildings of Frijoles seemed equally divided between churches and saloons. Roughly three quarters of the natives are said to be carriers of malaria. There are all blood strains in the typical Panamanian, blended when the Panama Canal was dug. Frijoles, however, is largely Negro.

From a boathouse at the edge of the lake we set out in a homemade launch with a stout wooden roof and canvas sides to give protection against torrential

CAUGHT BY FLASHLIGHT

Moving stealthily through the forest at night, this puma inadvertently snapped its own photograph. Its foot can be seen touching the wire which ignited the flashlight and snapped the picture.

VULTURES ON THE WATCH

Over two hundred and thirty different kinds of birds have been observed on Barro Colorado. Sinister figures among these many beautiful creatures are the vultures, some of which are seen resting in this tree.

INDOLENCE INCARNATE

On the Isthmus of Panama there are two types of sloths —the three-toed and the two-toed, separated from each other by the Continental Divide. The former live on the Pacific side; the latter, on the Atlantic. Only on Barro Colorado are the two species found together. This three-toed fellow hangs upside down in the position these creatures often adopt when they want to snooze.

THE INSTITUTE FOR RESEARCH IN TROPICAL AMERICA

In its laboratories on Barro Colorado the United States possesses one of the most unique institutions for the study of natural history in the world. It is an important branch of the United States Department of Agriculture.

BROTHER PECCARIES

Bewildered by the blazing light of the automatic flashlight camera these two collared peccaries seem incapable of deciding what to do. The so-called "collar" may be seen on the animal at the right.

CENTRAL AMERICAN TAPIR

Tapirs are nocturnal creatures that live in heavy forests near water. The flashlight camera caught this one just as it was emerging from a forest pool where it was submerged up to its eyes.

tropical downpours. We headed in a direction indicated by orange painted cans on metal poles. Private channels ran to the main channel of the canal from Frijoles and from the Island through what appeared to be a battleground. Ghosts of the tropical hardwoods which once covered the area still are standing there—rising high above the surface of the water or lying treacherously slightly below. Guayacan, caiba and cocabola, bare, termite eaten and shabby, give the lake the appearance of a no-man's land.

The sunlight was brilliant as we chugged along, and the sky clear. Cormorants disported themselves in the water, and on many of the oil-tin markers sat kingfishers. These were larger and less striking-looking than our crested sort, but in this thick, balmy air, vitality would have seemed out of key.

As we approached the far shore of the lake we neared islands. At their muddy rims stood white cranes, vivid against tropical green backgrounds of bananas, low palms and thorns. Once we saw a big log turn into an alligator and shove off, the knobs containing his nostrils and the bridge of his nose alone cleared the water as he moved.

Dr. James Zetek, of the United States Department of Agriculture, Director of the Institute, was host to our small party. He passed a note from the front of the boat: "We may see spider monkeys on the next island." Sure enough, there was a cluster of them, black, with straight limbs and dangling tails. Their multilegged appearance made it easy to see how they came by their name.

Soon we were at the boathouse of the Island. Besides a larger launch, it contained numerous cayucas—heavy, wobbly dugouts of exactly the same sharp-ended pattern as the canoe which met Columbus far off San Salvador.

Three hundred concrete steps up a high bluff took us to the Institute. The plant, consisting of laboratory, dormitories, library and sheds, was completely comfortable and modern. There was a permanent service staff, including a notable cook. Here the civilized portion of the work is done. Specimens are studied and mounted, notes are copied and reports are made. The Institute keeps very complete meteorological data. In the heavy tropical rain forest which comes right to the edge of the well-kept grounds is planted the world's largest termite "cemetery." Blocks of wood of various varieties and with various impregnations are set in the ground. The blocks, sticking half-way out, look for all the world like some dark graveyard of dwarfs or gnomes.

Obtaining machetes and stout snake sticks with forked ends, we stepped forth into as densely packed and informative a bit of jungle as any in the world, perhaps the strangest forest under the stars and stripes. The same reptiles, birds and beasts we were to see may have been the creatures studied by men like Ditmars, Chapman, Carpenter, Barbour and many more world famous naturalists.

We were first impressed by the forest itself. Why growth is more luxuriant on the Island than elsewhere in the Zone it is difficult to say, but everything does seem to grow with an especial vigor. There is little undergrowth beneath the forest trees which tower a hundred feet and more. Llanas, or hanging vines, run the immense distance up to their branches, and in the tree-top world there are many forms of large, parasitic plants—birds' nest fern, strangler fig, and, especially, orchids. Our first stretch of jungle brought to mind the lines from Kipling's poem, "Red Gods Calling":

"Do you know the steaming stillness of
the orchid scented glade
Where the blazoned, bird-winged butterflies flap through? . . ."

No new world orchids—not even the heavily scented *Flor de Panama*—give off aroma in the daytime. Lack of scent is characteristic of deep jungle, and this in itself gives a sense of strangeness in Central America. The association of scent and color is so strong that it is not hard to imagine a perfume on seeing orchids in great numbers. A type of large butterfly with deep blue, brilliant wings was so common on our walk as to be present almost all the while.

The root system of the forest holds a lot of water, and evaporation from the forest floor is slow. The trails are muddy twelve months of the year, and in the rainy season are exceedingly so. This makes it possible to read spoor almost as readily as fresh snow at home.

The first signs of animal life we came upon, some fifty yards down the trail, were the slots of collared peccary.

Our guide was a Chiriqui Indian (pronounced Cherokee). His trained ears picked up a rustling, far in the treetops, that was not one of the various rustlings of the wind. Using glasses, and following the direction of Sylvestre's upraised arm, we could see a little face. When the Cheshire cat vanished, it left its grin behind. With our gray marmoset, it was just the other way around. First, a flashing smile and then the task of distinguishing body, arms and legs from the

(Continued on page 32)

MOJAVE'S MINERALS GO TO WAR

by Richard Hamilton

THE WEARY OLD man walked slowly into the Cottage Hotel at Randsburg, California, and upon him the years hung heavily. The ghost-white dust of Death Valley was like a mantle over his sagging shoulders, but his brown eyes were keen and his wrinkled face was kindly.

He looked about him as he walked into the little hostelry and then he saw "Worthy", innkeeper extraordinary and patron saint of the mining fraternity.

She greeted the old man cordially.

"I want a room," he said softly. "How much?"

"Two dollars," said Worthy.

For a moment the aging man was silent. Then he spoke. "Twenty-five years ago, I came to Randsburg and got a room in this same hotel. I paid a dollar for it. A dollar is all I can pay now."

Worthy looked compassionately upon the wanderer. "Friend," she said softly. "You are home again. A dollar it is."

This is the Mojave.

Sprawled on the flat of the barren wasteland lies the picturesque village of Mojave, cradle of desert history and hoary with memories of the past.

Here in the heart of this desolation, one hundred miles north of the metropolis of Los Angeles, this little town has had a profound and dramatic influence on the great dynasty that today is California. Crowded within a radius of sixty miles is one of the richest mineralized zones in all the world from whose fabulous mines pour the vital metals to strengthen a nation at war. Tungsten and antimony, manganese and potash, lead and zinc—war minerals all—find their way into the hungry maws of the nation's furnaces or into the spinning wheels of war industry.

Spokewise, with the little village of Mojave as the hub of the wheel, a hundred roads lead into strange remote places—into the glory of Red Rock Canyon where nature has wrought singular chaos; into strange grandeurs and freaks of erosion in the deep recesses of the mountains and even to a tiny shaft on a hillside where a solitary prospector digs silently away—lured by the golden vision of the future.

FACTORY IN THE DESERT

In the barren wasteland that is the Mojave the tall chimneys of new factories proclaim the fact that new uses are being found for the abundant mineral deposits of the desert. This is the new potash factory at Trona, California.

THE NEW GOLD OF MOJAVE

Today tungsten is far more important to us than gold. This tungsten ore from Shadow Mountains near Mojave contains four per cent of tungsten and is worth one hundred dollars a ton.

For many years the great tungsten mine at Atolia, California, has been this nation's greatest producer of tungsten. Now a desperate search for new deposits of the precious mineral is being made and the probability is that our country will become self-sufficient in tungsten.

The great vein of the Old Dutch Cleanser mine stretches across the top of a mountain and is visible for miles. Because of the heights of the mountain the ore, the almost pure white seismotite, is poured down the sheer grade in a chute.

The earliest important records we have of minerals come from the great father of mineralogy, Georg Agricola, who was probably the first to observe that "veins have their run and their rules." In his masterful work, *De Re Metallica,* published in Saxony early in the sixteenth century, he named most of the known minerals of today and listed many of their properties.

Mining was held in disrepute by many of the ancients. Their quaint views regarding the origin of ores and metals were based almost entirely upon philosophical speculation. Early in the fifteenth century, ancient ideas regarding the properties of minerals were gradually discarded as metals and minerals became objects of investigation and research.

And then, with Agricola's magnificent compendium of knowledge in the field of minerals, their occurrence, extraction and dressing, mineralogy became a science, and the first mining school was founded at Freiberg, Saxony, in 1650.

Then came the mining dynasties and the nations with the great mineral deposits have grown strong in the passing years. Thus has America grown great for she has incomparable mineral deposits and the technical genius necessary to their processing.

* * *

Thirty-five years ago, an eastern physician, slowly losing his long battle with tuberculosis, retired to the desert to die. For his last home he chose a desolate spot forty miles north of Mojave. Here, in the shadows of Government Peak, he built a little camp for his wife and family friend and prepared to meet his God.

Daily he took long walks and found solace during those last days in the beauty of his new found home. With the slowly passing weeks he became versed in the lore of nature and in the science of geology. Each day, when he arose, he would look up into the heights, up the gently sloping peak to the rocky crags above, and he grew to love the great peak in all its majesty.

And then, in that first spring, came the glory of desert flowers. Under the crags on Government Peak and glittering in the sun appeared a great yellow patch of brilliantly colored flowers vivid with nature's dye. Daily the doctor looked at this spot of color and it seemed to him to be full of vague meaning. His interest grew steadily.

At last, wan though he was, he determined to scale the peak before he died and to explore its mystery.

One morning, he departed alone, climbed the tortuous grade, and when evening's gloom again settled over the desert, a great mine was born, and thus to California was given the Yellow Aster, a fabulous bonanza destined to play its dramatic part in California history. From her reluctant depths, the great producer has yielded up $30,000,000 in gold and only now is she beginning to see the sunset of a brilliant career.

But nature, discontented perhaps with the calm of ages, decided to add a sequel to this drama, for in addition to giving the doctor his Yellow Aster, the magic of desert air endowed the ailing man with many more years of life, and he lived to see his mine become great and to reap the rewards of his magnificent discovery.

Under the crags of Government Peak, lies the mining village of Randsburg.

Here the old Cottage Hotel and its patron saint, Worthy, lure mining men from deep in the desert to a perfect table. I have known mining men to drive fifty miles beyond their destination to dine and talk with Mrs. Worthington. For she has the rare gift of sympathy and understanding.

But no coroner historian will hold an inquest over the remains of Randsburg, for, although the Yellow Aster's star has set, a hundred little mines keep the little village alive.

Shortly after the inception of the great gold producer, an Irish prospector named Kelly sat down to eat his lunch on some rocky outcrops about a mile out of Randsburg. He idly inspected a piece of float dislodged by his foot and then he leaped up in excitement for resting there in his hand was a chunk of virgin silver!

Kelly sold his holdings for a pittance, and lived to see the great Kelly Mine produce $15,000,000 in silver. This mine has never been bottomed, but at the 1500 foot level, a great underground stream of water was encountered and no pump of our day, however powerful, has been able to uncover the sterling riches deep in the Kelly labyrinths.

Only one mile from the Kelly Mine, is Atolia,

Two Mojave miners pan the ro
from their tunnel for traces of t
yellow metal. The Mojave aboun
with these small projects and
casionally great strikes are mad
A ventilating fan may be observ
on the right and near it the tool
the miner's trade—a jackhamm

In the far distance beyond the Joshua trees that grow in the Mojave is the snow covered Tehachapi range. Gold in the China Hill placers in 1854 drew the first settlers to this region which has yielded vast fortunes.

solid through the years, a mine which in World War I, carried the great load of tungsten production that helped make the nation victorious.

Tungsten, one of the most vital of all war minerals, is used chiefly in the manufacture of high speed steel, and without it tool steels would be virtually useless. Formerly, we imported most of our supply from China, but China today is a stricken nation. The source of supply is shut off, and every known domestic tungsten prospect is eagerly examined by government engineers.

Solitary prospectors armed with a single tool—the fluorescent lamp—are at work everywhere. The fluorescent lamp, a development of recent years, is a small portable unit utilizing ultra violet radiations, which, when focused on tungsten minerals, reveals the tungsten in the host rock as surely as the assayer's crucible. The little instrument has been one of America's greatest defense weapons and is rapidly making the nation self sufficient in tungsten production. Each night in the mountains of the Western Cordillera, a hoard of prospectors, neophytes and professionals, comb the granite masses of their native hills in search of new tungsten deposits.

From the hub of our little wheel, one road leads to the silent, sepulchral town of Garlock, forty miles north of Mojave. Here, early in the century, all California went wild with the news of the fabulous riches found in Goler Gulch. Garlock sprang overnight into a city of six thousand people and they dwelt at the foot of El Paso Peak to suck dry the great placers of Goler. Out of the narrow gulch, they gouged $12,000,000, then like locusts, they moved on. Literary masters have given us their version of the greatness that was Goler, but like a mirage, Garlock has faded with the years. It is a short story of "Gs" with opening, climax and ending—"Goler, Garlock, glory, ghost town."

The story of the renowned Golden Queen is a remarkable saga of the desert. It is a story of perseverance, of riches and of faith, for all things come because some man believed. Four years ago, George Holmes, a young prospector assailed by privation and desperately in want, determinedly dug in his little shaft on the side of Soledad Mountain. A few miles from Mojave and almost on the main inland highway, the little claim of Holmes

(Continued on page 33)

HARVESTING OYSTERS IN VIRGINIA

(Continued from page 23)

Evans answered this question by two lines of experiments, the like of which had never been made before.

Checking the Department of Agriculture's soil sedimentation experiments they learned that certain York River bottom areas were cut deeper or scoured by the river current while other areas were filled with silt. The experimenters thereupon built seven stations along the river, each station in a good oyster growing area. Six stations were spaced on alternate sides of the river from one-and-a-half to seven miles below the West Point mill. The seventh station was at Queen's Creek nineteen miles down York River.

Each station had eight wire trays filled with two-year-old oysters, four trays with "Penneman" bivalves from near Queen's Creek and four trays with "Bell Rock" oysters from a point only five miles down river from West Point.

Four trays (two of "Penneman" and two of "Bell Rock") were placed on the river bottom at each station, the other four trays were eighteen inches above the bottom. All were hanging on a rack which could be raised and lowered for inspection. During eleven months these guinea pig mollusks were watched almost breathlessly by the experimenters.

At the end of eleventh month of natural feeding the oysters at the four stations reposing in "fill" areas showed a composite *survival* of sixty-five per cent in baskets off the bottom and exactly twenty-two per cent *survival* in the baskets on the muddy bottom. In the three stations in the "scour" areas both types of oysters showed about the same mortality for both the top and bottom baskets. The entire test showed that silt caused forty per cent of death in the "fill" areas, against practically no mortality because of silt in the "scour" area.

So much for river mud and consequent death to good oysters.

There remained the more important problem as to how much mill effluent it took to kill oysters, and how much they could stand over a long period.

In a small solarium, covered with cello-glass and placed out of doors near the mill, several cylindrical glass tanks were filled with pure water from nearby salty Piankatank River where there was no possible industrial contamination. Water in these tanks was then given doses of pulp mill effluent, beginning with the average percentage for York River and increasing in a series up to seventy-seven times. The latter concoction was the color of creamless coffee. Somewhere along this series Chief Chemist Vranian expected to find a poisonous percentage of effluent. Three duplicate tanks were set-up for control purposes with nothing in them but pure sea water. Oysters, from the same Piankatank River region, were then placed in all the test tanks. These guinea pig oysters were about three years of age and of a uniform shape.

The experiment, upon which the future of the $10,000,000 mill might be resting, ran from November 9, 1938 to May 18, 1939. At its conclusion there was a momentous oyster opening attended by all the important personnel of the mill. There was also present Mr. J. R. Nelson who had spent much of his life in oyster culture who presided as an official observer.

Every little oyster had a meaning of its own, but just one oyster failed to survive the experiment. That oyster had reclined in a tank containing only pure sea water! In general, the more effluent in the test tanks the fatter and happier the oysters appeared. Mr. Vranian was attempting to learn how much mill effluent would be required in the water of York River to kill an oyster. The experiment proved that seventy-seven times the normal percentage would not bring death to a York River bivalve, probably because the carbohydrates or other sugary compounds, the salty compounds such as sodium carbonate and the ordinary vegetable matter in effluent are natural shellfish foods although little of them might reach down river oysters in the widely flowing and rather deep York.

Having arrived at this delightful denouement, which disposed of an unfortunate misunderstanding—and having become fascinated by mollusk lore—President Olsson and his fellow executives of the Chesapeake Corporation determined to restore the Virginian oyster industry to its pristine glory. The Corporation reached a compromise with complaining York River oystermen by taking over 3,000 acres of their worn out and nearly worthless oyster beds. Those parts of the 3,000 acres particularly damaged by scouring were given a shell crest of 250,000 bushels. On these empty oyster shells young oysters can sit and eat and drink and sit and sit until they have grown to maturity, as in the glorious days of the Old Dominion.

Near the mouth of Queen's Creek, from which Colonial Governor Alexander Spotswood in 1717 acquired the bivalves for his banquets at Williamsburg Palace, the falling tide of York River reveals miles of wire trays in which multitudes of oysters send up little geysers before they close their shells and take a nap under the actinic rays of Virginia's sun. They are damned Yankees, these oysters. They have been brought down from distant Long Island Sound. Thousands and thousands of three-year-old seed oysters in thousands of wire trays resting on creosoted wooden sills sit off the bottom of Creek and River. Transplanted oysters, far from their homes.

These transplanted bivalves, which never touch bottom, develop more in one year than they would in two or three years on an ordinary oyster bed. Eventually ichthyologist Evans believes he can do as good a job with home grown seed oysters. Then Virginia oysters will come again into their own!

The virtues of this bivalvic venture lie not so much in raising a crop of shellfish on trays although it does keep sand and mud out of their diet. Something like this has been done on the Calvados coast of France for gourmets who appreciate delicacy. Ancient Romans did something like it, during the Caesars' reigns. The results Evans attains are not due primarily to Virginian climate and waters. Modern York River oysters develop rapidly and succulently because at low tides, during about twenty-five per cent of each day, the oysters are resting while they take sun baths.

A kymograph record kept by this York River oyster farm shows that during the eighteen hours daily each oyster is submerged it pumps in and expels between forty and eighty gallons of water from which it strains its microscopic food and its lime for shell building. It thus gets its nourishment and "housing" under the most sanitary conditions. But, due to its exposed periods, it does not work itself thin by continuous feeding. The sun-bathed rest periods give it fat and flavor.

The last time I visited this novelty in production I mentioned it casually to President Olsson who, one way or another, directs the operation of about $18,000,000 worth of factories. In his quiet modest manner he admitted a certain pride in his major industrial performances whose products sell for about $6,000,000 yearly.

"But will you please note," he added happily, "that we are selling $100,000 worth of oysters at the top of the market this season."

* * *

THE SNAKE STONE OF NEPAL

(Continued from page 13)

god images just as our American Mayas had "killed" their holy emblems by breaking them when they flung them into the Sacred Well of Chi-chen Itza. Mexico and Nepal were half a world apart.

It grew dark as I worked, and I was continuing by flashlight when suddenly I saw what appeared to be the head of a snake upon a snake design. I was overjoyed, but as I bent down to it it moved and I saw then that what had seemed the head was actually a live scorpion, and one of the largest species known. It was at least seven inches long. Looking more closely I saw that strange and rarely witnessed phenomenon, the young of the scorpion riding on their mother's back. The babies are born alive and for several days are transported like papooses by the mother until they can fend for themselves.

I was so fascinated by this that I didn't see the rotten stump on which I stepped. It crumpled under me. I fell in a heap with my hand square upon the tail of the scorpion. Instantly I felt a stab of pain as if a good sized nail had been driven into the palm, and my jump took me the first two yards along the trail back to camp.

We had snake anti-toxin of various sorts, but nothing for scorpion bite. It was quite painful by now. Leila produced whiskey, and that, psychologically, helped some.

"Why don't you try your snake stone?" Armand suggested.

There could be no harm in it, and it would be interesting to see if it really would adhere. I made a slight incision across the spot where the sting had entered, sterilized the stone in alcohol and placed it upon the wound. To my amazement it stuck there, as if by some suction of its own it were trying to withdraw the venom. After two or three minutes it fell from my palm to the table, and we noticed that it was darker now and that the wound was bleeding freely. None the less it felt no better.

We soaked the bezoar in milk—canned milk—according to prescription, and the milk became slightly pink, proof positive that it was discharging blood, if not venom. Several times that night I repeated the operation and finally went to sleep with the stone clutched in my injured hand. Still the pain was undiminished.

Dawn came slowly through the great trees of the Terai and I wakened late, immediately aware that my hand hurt no longer. The bezoar, however, had disappeared. It was not in the cot. It was not in the tent, for we looked everywhere.

"Darn funny," I said to Armand. "It surely couldn't have been absorbed. You don't suppose it's in me, do you?"

"I do not," he grinned. "Did you happen to see what's outside?"

I went out. There in a basket of leaves was the quart and a half of castor oil which I had paid for my treasure. And just disappearing among the trees was the old Tharu who so reluctantly had sold it to me. Following him was the pet gazelle. He did not turn when I shouted, but the gazelle did. Its blind eye was wide open now, and the eyeball was oval and black. Then I knew it was no eyeball at all, but my own bezoar stone, set there for strengthening, when the gazelle lowered that eyelid slightly in what was again exactly like a wink.

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NATIONAL TRAVEL CLUB BULLETIN

OBJECTS: to create and promote interest in travel and exploration; to furnish its members information of travel and secure concessions for them; to work for the betterment of transportation facilities; to arouse public interest in the conservation of our natural resources, the preservation of historic sites; the development of our National Parks and playgrounds, and of our waterways, the protection of our forests and our wild animal and bird life; to assist the good roads, safety first, city beautiful, and all movements that make travel safe and attractive: and to establish a closer relationship with the peoples of the world in order to secure the cause of international peace and justice.

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THE CLUB'S NEW QUARTERLY PUBLICATIONS

The Committee of Selection of the National Travel Club takes pleasure in announcing a double selection for its quarterly publications. The two books chosen are *Flight From Terror* by Otto Strasser and Michael Stern, and *He's in the Paratroops Now* by A. D. Rathbone IV.

Many of us visited Germany during the decade or so preceding the outbreak of the second World War. How few of us, however, realized what was really happening in that country which once offered so much scenic beauty and so many historic cities for the delight and instruction of the traveler. *Flight From Terror* is a book by a man who was intimately associated with the sinister underground machinations which were being carried on while the carefree tourist moved from city to city oblivious of the forces which were going to destroy the Germany he was visiting. *Flight From Terror* is an exciting and terrifying story of how Nazi Germany came into being. Since it is everybody's desire to understand the warring nations we can no longer visit the Committee of Selection felt that this book could not fail to interest our members.

Otto Strasser is Hitler's civilian enemy number one. Six times Hitler has tried to have him killed, and six times Strasser has survived. When Strasser fled Germany in 1935 he left behind him an organization that has struck dread into the heart of every Nazi—the Black Front, the underground opposition to Hitler.

A member of the Nazi party in its early days, Strasser rose from the ranks to become second only to Hitler himself. The ill-fated putsch at Munich in 1923 forms the grim prelude to this saga of power-mad political adventurers. Then, with mounting intensity and increasing terror, a mighty political army is created. With growing misgivings Strasser watches the growth of the Frankenstein. He reveals facts that have never been told about Hitler, Goering, Himmler, Goebbels and their fellows. He tells how funds were secured, how the storm troopers were organized, how political opponents were crushed. He describes how he founded a chain of Nazi newspapers, how he criticized the work of the party. Finally, Strasser revolted, to begin his flight from terror. This is the incredible record of a human being marked for death by the most fanatical hater of all time. Strasser met violence with violence until, his life hanging only by the slenderest thread, he dashed across the border to safety, to continue his fight against Hitler from Austria, Czechoslovakia, France and now Canada where, from his headquarters in Montreal, he directs an underground movement against the Nazis.

Here is the story of a super-eventful life. It is a record of terror and violence, of escape and struggle by the man Hitler couldn't kill. Otto Strasser knows what he's talking about; he knows the cold, terrifying facts. Here is a book that throws a blazing light on the activities of the greatest enemy the freedom loving people of the world have ever faced.

* * *

All of us these days have relatives or friends in the armed forces either in this country or on one or more of the far flung fronts on which this war is being fought. *He's in the Paratroops Now* will give our members an opportunity to live with the most spectacular troops in our armed forces. None of our fighters have aroused more wonder and admiration than these sky-flown warriors who are now seeing action everywhere.

The paratroops are chosen troops of our Army and Marine Corps. No one will be inducted into these services; they are all volunteers, hand-picked men. Not even the British Commandos or American Rangers are more carefully selected. Paratroopers must be perfect physically, with nerves of steel and the speed and agility of tigers. Their weapons are pistols, rifles, tommy guns, mortars, machine guns and TNT; their duties are manifold and hazardous. They must demolish and sabotage enemy planes, aviation bases, fortifications and lines of communication. They must disrupt water, gas and electrical services. They must learn mapmaking and map-reading, and be prepared to fight under every conceivable difficulty.

How are these men chosen? How are they trained? What are their duties? Where are they fighting and what are they accomplishing? This book gives the answers and introduces the hardest, toughest and best dressed soldiers in our forces. Here is your chance to meet these paratroopers of ours, train with them, and join in their thrilling maneuvers. You will never forget them plummeting by the hundreds from the sky and their many astonishing activities on land and in the air.

You will better understand the reports from our many battlefronts when you know the duties of the paratrooper, and what manner of dare-devil he is. Mr. Rathbone has written on paratroops and parachutes for *Scientific American* and other publications. In this absorbing book he brings alive the most colorful division of Uncle Sam's Army.

Flight From Terror is a volume of 361 pages with a jacket in full color. *He's in the Paratroops Now* is a volume of 190 pages superbly illustrated with nearly a 100 photographs showing all the hair-raising activities of the paratroops. These two volumes are offered to our members at less than half the regular price. Those who are interested in receiving detailed information about these books may do so by writing to the Secretary.

GARDENS FOR WAR

The production of home grown vegetables in Victory Gardens this year offers town, city and suburban dwellers an opportunity to make an important contribution to the national food program and to supplement their own family food supplies. Every encouragement is being given by the U. S. Department of Agriculture, in cooperation with other agencies, to the growing of Victory Gardens by all who have a plot of open, sunny space with suitable soil, or who have access to an allotment or community garden plot.

In 1943 every farm, where climate and water supplies permit, is being asked to have a garden big enough to produce the family's entire yearly supply of vegetables, both fresh and processed, and as much fruit as possible. In our towns, cities and suburban areas, wherever there is sufficient open, sunny space and fertile soil, people should grow as large a supply as possible of these protective foods. If the backyard isn't large enough to have a real garden without tearing up permanent ornamental plantings townspeople should seek garden space in a community plot or allotment gardens within walking distance or reasonable access by bus or trolley. On plots not smaller than 30 x 50 feet they can get down seriously to growing some of their own supplies, particularly the green and leafy vegetables, yellow vegetables and tomatoes.

Victory gardeners can get the "know how" for growing garden vegetables from their county agricultural agent, vocational agricultural teachers and experienced gardeners. They can secure leaflets and bulletins giving good practical tips on gardening from their State Agricultural Extension Service located at the State Agricultural College or directly from the county agent. Gardeners with long experience in the community, seedsmen, nurserymen, and dealers in gardening equipment and supplies can also be of help in getting the victory gardener started.

The National Travel Club urges its members to cooperate fully in this campaign.

ORCHID HUNTING IN MEXICO

(Continued from page 17)

encountered there had larger pseudobulbs and put out bigger flower spikes. Many of them were scarcely recognizable as the same species.

Out in the jungle in this area our Huasteca Indian guide, Ignazio Majorca, was careful to replace all plants that we did not care to take with us. Often a large clump of plants that we wanted contained several other varieties that we did not want. It would be impossible to get the clump without bringing down the unwanted orchids, too. Patiently, Majorca would replace the discards —and voluntarily. He was the only native guide we ever knew who would do this.

Majorca, we think, is a brown-skinned pearl of great price. Dependable and almost always punctual, there is little of the traditional Mexican mañana in his make-up. Our Spanish is meager and his English stopped with "hokay" and "thanks you," but we had no trouble in understanding each other. The fellow who called the Indian "wooden-faced" never laid eyes on Majorca's expressive features.

He could be impassive, too, for nothing we ever did seemed to surprise Majorca. If we chose to go after *pescados* (fish) he was ready with a firecracker to stun *pescadillos* (little fish—minnows) for bait. If we hunted for tarantulas, he was as pleased and amazed as we were when we turned over a stone and found one of the hairy black monsters crouching below. If we wanted to buy an ocelot or a kinkajou, he knew of an Indian who had one for sale.

But Majorca was at his best in hunting orchids. He could spot the kind we wanted in the tallest treetops. And there were few jungle giants that he could not climb. Leaving his huraches on the ground and with machete and rope slung over his shoulder, up he would go, his strong brown toes clinging to the bark and tangled lianas with life-long familiarity.

Lady Luck plays an important part in the game of orchid hunting. Since orchid plants themselves are often dried-up and nondescript in appearance, the most experienced hunter is apt to pass them by when they are not in bloom. Take *Epidendrum mariae,* for instance. Its flower is pure white with pale green sepals and petals. Pure white orchids are greatly prized and not too common. Unlike many of the other *Epidendrums,* this one has a large flower. Yet it was completely unknown until four years ago —when a collector accidentally found it blooming in the fog-swept mountains above Tamazunchale.

Between Puebla and Banderilla, in the State of Vera Cruz, is a territory that rightfully belongs on the moon. It is a stretch of volcanic cinders—no soil, no rock—just purplish-brown clinker spewed up by an eruption of the Cofre de Perote volcano. The clinkers range from pebbles to boulders in size. And pushing up through this cinder mass are gaunt pine trees, a few grayish ferns and some undernourished clumps of moss. Certainly it would seem to be the last place in the world to find orchids.

But on many of the pines we found clumps of *Epidendrum vitellinum.* Their coral-red sprays were the only touch of color in that dreary landscape. The plants themselves matched their surroundings for they too were grayish and withered looking. If they had not been blooming we never would have noticed them.

What good are orchids? Very little, if you want the utility of corn or beans. Beauty, yes; with endless variety, color and fragrance. There's something of an exotic lure, too. Whether you buy your orchids from a commercial florist or venture into the tropics after them, the enchantment is there.

Only one member of the vast orchid family has any commercial utility. This is the vanilla. This strong green vine with its fleshy pointed leaves is an orchid, although its whitish flower is insignificant. But its eight-inch seed pods, when ripe and dried, are the source for everything covered by the phrase, "Make mine vanilla."

While mankind may be slow to make use of orchids other than vanilla, insects have been busy. With *Schomburgkia tibicinis,* for example, ants have appropriated this species for their homes. It is a rare *tibicinis* that does not have a colony of large, stinging ants living in its hollow, foot-long pseudobulbs. Thus, the process of collecting this species usually ends in a wild dance to get rid of the angry ants.

"There seems to be a symbiotic relationship between *tibicinis* and ants," a Mexican orchid expert told us. "The orchids seem to need the ants. In my greenhouses they will bloom the first year after being collected—if there are ants in them. Without ants, it takes them three years to produce a bloom spike."

Not many of Mexico's 550-odd orchids produce flowers of the commercial corsage type. These valuable orchids come mainly from South America. But Mexico has contributed the *Laelias,* a genus of orchids very closely related to the valuable *Cattleyas* of corsage fame. Almost all of the Mexican *Laelias* have been crossed with the *Cattleyas* to give the latter more color or a better shape. Most Mexican orchids are "botanicals"—curiosities prized only by your true orchid fan. But each year more people take up orchid growing as a hobby, just as we have done. And to them, as to us, the mountains and jungles of Mexico spell an orchid hunter's paradise.

MAN-MADE ARARAT OF THE JUNGLE

(Continued from page 26)

tangle of boughs and vines. Later in the morning we were to run across other, more lively specimens, but all seemed rather sensible of their exalted station in life. Sylvestre talked to them by kissing his lips loudly, but they only replied by grave nods. Still less playful was a poor little handful of night monkey, pulled from its home beneath the buttressed roots of a great banyan tree. He was mostly head, and his head was mostly eyes, which in daylight were evidently blind. He shivered and sighed plaintively now and again. His head was reminiscent, in its unwholesome and deformed appearance, of those shrunken human heads prepared by cannibals in Darien, some hundred miles away.

While still out on the lake we had heard ahead of us a distant roaring, exactly like the roars of many bulls. Intermittently we had heard this noise all morning, louder and louder, until now it was overhead. Greater than the roar of a lion or tiger, the call of a three foot howler monkey also exceeds the roar of a one-ton bull. The noise is made by a thick, bony vessel in the throat, a structure unique among mammals. Dr. Chapman has described the call perfectly: "Beginning as a low grunt, it grows louder, rapid, more incisive, and quickly rises to an overpowering, ferocious sounding roar." we saw a dozen or more of these beasts during the day, and once saw a baby riding pick-a-back on its mother. The infant's tail ran down around the mother's middle and acted as an anchor. Sometimes the monkeys became vocal and dropped refuse on us. Sylvestre called to them very successfully by pursing his lips to whistle, and then drawing his breath in hard. We saw no howlers in the water, but heard that they swim with an overhead stroke.

We reached a rise at the far end of the Island, and here there is a clearing about a big steel tower. In this a naturalist can sit, screened and comfortable, while he observes the activity of the animals below. In a corner of the clearing stood a corozo palm, with a trunk shaped like a pineapple. Where the fronds joined the trunk, dead leaves and fibre formed an ideal home site for rodents and reptiles. From this tree we prodded a deadly palm viper, green, speckled with red, a small cousin of the enormous bushmaster.

We later saw a harmless vine snake, shaped and colored like a length of llana, and almost undistinguishable from one as it hung motionless by the tail. Its circumference is about that of your middle finger but it can swallow a mouse as thick as your wrist. An eight foot boa, pale tan and dark brown, was coiled about a tree beside the trail. We did not disturb him.

We saw the world's largest spide a tarantula as big as a man's ha with the fingers outstretched. I poison is secreted from the top of th back. Reaching up swiftly from be low, the entymologist of the grou caught the brute with bare finger and held it as it spewed out a goo teaspoonful of yellow venom.

The Island must be an Eden for th giant anteater, called by the native *gato hormiguerro,* or ant-fighting ca The entymologist pointed out soldie ants—whose workers, and not y ar riors, are the most dangerous. Al termites, subterranean and non-sul terranean, with their huge hous built on the ground or on the bough of trees. He showed us leaf cutter whose tiny feet have worn deep lan in the forest, and the Ponera, thre inches long, the world's largest ant

Small white bats were stirred o of a mighty fallen log, as we a proached the Grove of Big Tree The trees among which we had ju passed were certainly not smal These, however, were rivalled in ou experience only by pictures of th California redwoods. They were im mense in all dimensions, and the fo est fell away around the grove, an the jungle grass grew no higher tha the knee in all the area.

It was a perfect setting for the ex perience of seeing gauns. Gauns ar a species of native turkey, and th largest flying land bird. If Sinba had had a few of these at his disposa instead of mere rocs, he could hav really set himself up in diamond Our gauns were raucously noisy, an never stayed still—flapping their awe inspiring bulk from branch to branc like warblers in a briar patch.

One could go on at great lengt describing the birds and animals o Barro Colorado. Toucans, armadi los, sloths, coatis, lizards, porcupine opossums, humming birds, cotinga antpittas, pumas, forest deer, oropen dolas, peccaries, puff birds—these ar only a few of the fabulous creature that inhabit this exotic and luxuriar island whose trees and plants are sai to number a thousand species.

Barro Colorado is so amazing be cause it is a sanctuary. As one we known scientist who knows it well ha said, "I do not believe there is an other place in the world where on can see so much of natural histor in so short a time, with so few in conveniences . . . when I note the grea amount of published results and th quality and diversity of the studie made it becomes increasingly evider that it has more than justified its ex istence."

It is perhaps the strangest fores under the stars and stripes. It is unique heritage of the nation, an once spoiled, it could never be en tirely replaced.

* * *

MOJAVE'S MINERALS GO TO WAR

(Continued from page 29)

had been tramped over by prospectors for countless years.

Engineers turned down his little prospect, mining men told him he was wasting his time, but Holmes plodded on. From friends he borrowed a little money here for dynamite, a little grubstake there. Then when he had exposed a small stringer or veinlet of gold ore, he went to Bakersfield and from three aging school teachers, his friends of his youth, he borrowed their life savings, $1,000 from each.

Then came one of the most dramatic episodes of Western mining and it must have been with profound pleasure, with infinite gratitude, that one year later, George Holmes walked up to these three friends and silently laid in the hand of each a check for $100,000.00.

For George Holmes, prospector extraordinary had discovered one of California's greatest mines, the Golden Queen, and had sold his little claim for the fabulous sum of three and a half million dollars.

But the buyers of the Golden Queen were not speculating or hoping, for from this massive vein has come nine million dollars in gold and silver after four short years of operation, an unparalleled feat in California mining history. The end is not yet and the blocked out ore of this producer is measured in thousands of tons.

For those who might believe that California's great resources are near exhaustion, witness this episode. One day in late December of 1941, a low freight car stood on a siding at Mojave. It was no different from the others, drab and commonplace, but the many sacks on it were full of meaning.

They were full of gold concentrate and had come from a new mine near Mojave, recently discovered and developed, the Cactus Queen. The car weighed but forty tons but a king's ransom was there, for each of those tons had a value of $8000, a third of a million dollars in one shipment alone. Thus does California march on.

Numberless strange and useful minerals are found on the Mojave, many of them necessary to make up the warp and woof of the intricate pattern of war. Among them are diatomaceous earth, used in the processing of lubricating oil for engines. The mineral was laid down by the sea and consists of minute skeletons of small water plants called diatoms. Bentonite, a white mineral used similarly; sulphur is mined in great quantities to the north and limestone abounds, the mother rock that furnishes tremendous tonnages of cement for war purposes.

Here in the desert is to be found one of the greatest deposits of iron ore known to man. Millions of tons of hematite, an ore of iron, is found in the San Bernardino County quadrangle, and, while the ore is somewhat lower in grade than the great Mesabi and Vermillion deposits of Minnesota, the nation's supply of iron ore should last for decades.

Gypsum and clay and talc exist and are mined and even the strange fire opal, the semi precious gem stone all combine to give us wealth.

This area is the principal world source of borax, due to the great kernite deposits at Kramer, east of Mojave and from the brines of Searles Lake to the north, where massive deposits of potash and borax have concentrated in the bed of this ancient lake. The discovery of the great Kramer Borax deposits might never have occurred but for a freak circumstance. The beds of borax lay flat, like a blanket deep in the earth, and above them is the sagebrush and greasewood and the shifting sands—no sign of evidence to give the wandering prospector the key to the great secret.

To this wild country came one day a hospital manager, a man whom the gods had decided to endow with their favor.

Choosing a spot directly over the massive borax bonanza, he decided to build a sanitarium, but wisely decided to drill for water before erecting his institution. Thus was history made, for Kramer's limitless borax deposits have produced untold riches and helped make a nation great.

From these magnificent bonanzas in Mojave's little wheel, the wayfarer looks out and beyond the waving cacti, the ceaseless desert wind. He sees the mighty growth of an industrial empire and he knows that without our Mojaves, our Mother Lodes, our Anacondas, we would be clay in the hands of world sculptors, who are fashioning world history with metals.

PLANTING VICTORY GARDENS IN THE SEA

(Continued from page 21)

of the fleet's largest combat vessels were lost. The cruiser *San Diego* went down off Fire Island, New York, and the battleship *Minnesota* was damaged severely off the Delaware Cape.

The marked improvements made in mines and mining operations since the first world war are closely guarded secrets. U-boats, in particular, fear mines. During the 1914-1918 conflict more than forty subs were reported as sunk by mines. Britain lost five battleships, one cruiser, two light cruisers, five sloops, twenty destroyers and four underseas craft in that manner.

The Army Mine Planting Service, formerly under the command of the chief of Coast Artillery, now receives orders from the Defense Sector chiefs. All officers are trained for three months at the Fort Monroe School of Submarine Mines, while planting crews are assigned to regular mine planters to learn the practical operations from old hands. And at the end of six months they usually learn more seamanship than some Navy men.

Some of the warrant officers on the planters have had experience in the merchant marine or the Navy—or both. Skipper Hansen, who is in the latter category, has been in the mine planting service for twenty years. During that time he has dropped anchor in harbors all over the world.

Mr. Hansen is perhaps the only Army man who ever piloted a Navy vessel. Several years ago, when he was operating out of Panama, some officials from Washington desired to take a trip through the San Blas Islands. None of the Navy men knew the waters and they were reluctant to take aboard a native pilot. After hearing of their predicament, Mr. Hansen volunteered his services, was accepted over weak protests, and was granted leave from his ship.

"We know the bottom of every harbor along the Atlantic and Pacific coasts as well as we know the Star Spangled Banner," the skipper explained casually. "And Army sailors always enter those harbors without the help of local pilots. In fact I've always piloted my ship through the Panama Canal."

Now that the mine fields along the coast have been planted, replacement and repair work will occupy most of the mine service's time. Mine sweeping by the Navy occasionally cuts loose the Army mines. Cables sometimes break and water short circuits electrical connections.

One of the pills floated ashore recently and attracted two wide-eyed youngsters as a new toy. They be-

(Continued on page 34)

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PLANTING A VICTORY GARDEN IN THE SEA

(Continued from page 33)

gan to take it apart, found powder inside. When they showed the substance to their father that evening, he poured it into a paper bag and brought it to the police who later notified Army officials. They readily identified the TNT as coming from one of their mines and hurriedly packed up the pieces.

The four stripes and anchor stitched on Mr. Hansen's sleeves identify him as a member of the Army Mine Planting Service, but scarcely a day passes in port when some officer doesn't inquire about his branch of the service.

Although the officers and crew get a 50 per cent larger food ration because their work is strenuous manual labor, they do not receive any etxra pay for sea duty.

This business of mine planting is an unspectacular one which is conducted in the utmost secrecy. Living with a cargo of high explosives day and night requires courage and endurance in the men.

Their hours of duty are long, their life subject to change at a moment's notice. They must be ready to swing into action whenever and wherever they are needed.

Sole mascot of the ship on which I traveled was Butch, a nondescript mongrel dog, who joined the crew after sampling the food on several other ships.

Nobody complains because mine planting operations overwork him. As Mr. Hansen says, "The easiest way to keep an enlisted man happy is to keep him busy." And I never saw a more cheerful group of men than those on the planter.

One ship in the mine planting service was sunk by a Jap torpedo at Pearl Harbor. Another was sent to the bottom May 2 by an enemy bomb in the Philippines, losing her skipper and another officer in the action. In addition to tons of explosives for coastal defense, the ships also carry guns for their own defense.

THROUGH THE ROARING FORTIES IN MID-WINTER

(Continued from page 9)

intoxicating experience, especially in a vicious squall.

The wind tore your breath away and whipped your clothing out stiffly behind you. Below your feet braced on the thin footrope you could hear the roar of the dark water coming over the bows like a saw going through soft wood, and see the long pale phosphorescent ribbons of foam on either side sweeping away into the darkness. A sou'wester, unless it fitted snugly on your head and was tied securely, was as likely as not to blow over your face, or leave your head completely, and sail like a bird into the outer darkness. Swinging back down again to the deck was like returning to a remarkably peaceful and stable world.

All through these long stormy days, however, we consoled ourselves all the time with the thought that we were going to break our voyage at Hobart, Tasmania, before going on to Sydney.

None of us will ever forget the Tasmanian landfall. The island rose out of the sea one night, a long black ridge illumined by a high, white, reckless moon which raced and tumbled between lumbering banks of black cloud. And at dawn next morning we saw the green mountains and a fringe of trees silhouetted against the pink sky. It was an exhilarating moment. It signified clean clothes, good food, hot baths, and all the other amenities of a civilization we had temporarily forsaken. As we stood and stared, eyes wide and hearts high, as doubtlessly the sailors of Cook and Bligh of the *Bounty* stared as they came beating up Storm Bay in similar little ships to ours, our anticipations increased.

Unfortunately, so did the wind. For hours we tried to beat our way in against a head wind. And then straight from Tasmania's icy mountains came a gale, which, in a few seconds had blocked out our green and lovely land with a fast-running, wind-risen sea. All hands were called; there was nothing to do but run before it. That was all we were to see of Tasmania.

We drove onwards towards the Bass Strait, that treacherous channel between Tasmania and the bight of Australia, and the Westerlies shot their last arrows of hate after us. The wind went round to the nor'east, a perfect wind for making Hobart, but a day too late; we were close-hauled and a heavy cross sea made the movements of the *Cap Pilar* appalling. In the foc'sle meals were gymnastical performances eaten with knees and feet and arms firmly braced around the tables. The fiddles were useless; and even the heavy metal water jug in a special little compartment of its own constantly took off and crashed to the floor. There was no comfort awake or asleep. Even lying in your bunk was hard work. If you attempted to lie on your side, your head was alternately buried in the pillow, jerked out, buried again, jerked out. You had to breathe with a kind of crawl swimming motion.

The night after leaving Storm Bay we took over our record sea aft, which washed waist deep around the chart-house, and flooded the saloon below. The port watch came down at four in the night watch, and were called back on deck immediately, An hour or so later, they were snugly tucked up in their bunks, still in oilskins, when the youngest member of the watch awoke from a deep dream of four-poster beds to hear one of the watch on deck bellowing, "Downhaul in hand," to the officer of the watch, and had all of them out of their beds thinking it was another call for all hands before his mistake was discovered.

But there is an end to all misery. As we crept under the lee of Australia the storm died. The clouds broke open and the sun shone. We sailed past smooth undulating shores. And one afternoon after fifty-seven days at sea we sighted the huge arch of Sydney Bridge rising above the land. There was a great satisfaction in that, a satisfaction that perhaps only deep-water sailors know. We had run our easting down. We had come to port. And Sydney looked a pretty swell place as we nosed into the harbor.

What did *you* do today ... for Freedom?

Today, at the front, he died . . . Today, what did *you* do?
Next time you see a list of dead and wounded, ask yourself:
"What have *I* done today for freedom?
What can I do tomorrow that will *save* the lives of
men like this and help them win the war?"

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PEACE OF MIND...
in time of war?

Today no one can buy *complete* peace of mind for love or money. That must wait until the price of Victory is paid—in the mortal currency of blood and sweat and tears.

But every one of you who longs for present and future security—for your family, your country, your business—can and should do two things to help achieve that security. And to lessen today's worries.

With an eye to tomorrow . . .

Invest every dollar you can in War Bonds. Not simply for the immediate purpose of helping to pay for fighting tools—but because you can not make a better investment for your own future protection. After they've helped Uncle Sam to win the war, your Bonds will help *you* to educate the children, or remodel your house, or do whatever is nearest your heart.

With an eye to today . . .

Insure yourself against all risks of potentially serious financial loss through fire, accident or someone's dishonesty. You probably have fire insurance on your home—an automobile policy for your car. But is that *enough* protection in these times?

Naturally you don't need *all* the kinds of insurance offered by the Two Hartfords—there are more than 70 of them. But if you have a family—property—a job—a business of your own—useful eyes and hands—you almost surely need *some* forms of protection that you do not have now!

Get expert advice

Only a qualified insurance man can tell you *which* forms of protection you need—*why* you need them—*how much* you ought to have. Talk it over with your local Hartford agent* or your insurance broker. Two or three additional premiums are a lot easier to pay than one serious loss!

**We'll gladly send you his name.*

HARTFORD INSURANCE

Hartford Fire Insurance Company • Hartford Accident and Indemnity Company

THE TWO HARTFORDS WRITE PRACTICALLY EVERY FORM OF INSURANCE EXCEPT LIFE

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